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DICTIONARY FILE UPDATES: 20 NOV 2006 HIGHEST RN 913686-03-0

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=> FILE HCAPLU

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FILE LAST UPDATED: 20 Nov 2006. (20061120/ED)

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This file contains CAS Registry Numbers for easy and accurate  
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=> D QUE

L2 31 SEA FILE=REGISTRY ABB=ON (24937-78-8/BI OR 25038-59-9/BI OR  
25067-34-9/BI OR 7429-90-5/BI OR 7439-89-6/BI OR 7439-92-1/BI  
OR 7439-93-2/BI OR 7439-95-4/BI OR 7439-98-7/BI OR 7440-02-0/BI  
OR 7440-06-4/BI OR 7440-09-7/BI OR 7440-21-3/BI OR 7440-22-4/B  
I OR 7440-23-5/BI OR 7440-24-6/BI OR 7440-32-6/BI OR 7440-33-7/  
BI OR 7440-36-0/BI OR 7440-39-3/BI OR 7440-47-3/BI OR 7440-48-4  
/BI OR 7440-50-8/BI OR 7440-56-4/BI OR 7440-57-5/BI OR  
7440-66-6/BI OR 7440-70-2/BI OR 7440-74-6/BI OR 9002-86-2/BI

OR 9002-88-4/BI OR 9003-07-0/BI)

L3 6 SEA FILE=REGISTRY ABB=ON L2 AND PMS/CI

L4 681958 SEA FILE=REGISTRY ABB=ON (SI(L)O(L)C(L)H)/ELS

L5 73098 SEA FILE=REGISTRY ABB=ON L4 AND PMS/CI

L6 86031 SEA FILE=REGISTRY ABB=ON PA/PCT

L7 56322 SEA FILE=REGISTRY ABB=ON PI/PCT

L8 197384 SEA FILE=REGISTRY ABB=ON PES/PCT

L9 35169 SEA FILE=REGISTRY ABB=ON POLF/PCT

L10 19127 SEA FILE=REGISTRY ABB=ON PC/PCT

L11 17040 SEA FILE=REGISTRY ABB=ON PSU/PCT

L12 24 SEA FILE=REGISTRY ABB=ON L2 AND M/ELS

L13 23 SEA FILE=REGISTRY ABB=ON L12 NOT 1/LI

L14 69470 SEA FILE=HCAPLUS ABB=ON L5

L15 126556 SEA FILE=HCAPLUS ABB=ON L14 OR (SILICON OR SI) (3A) POLYMER? OR POLYSILYL? OR POLYSILOX?

L16 356793 SEA FILE=HCAPLUS ABB=ON (L13 OR NI OR TI OR CU OR AG OR AU OR PT OR FE OR CO OR CR OR W OR MO OR AL OR MG OR O K OR NA OR CA OR SR OR BA OR SI OR GE OR SB OR PB OR IN OR ZN) (4A) METAL?

L17 2013 SEA FILE=HCAPLUS ABB=ON L15 AND L16

L18 448 SEA FILE=HCAPLUS ABB=ON L17 AND (L6 OR L7 OR L8 OR L9 OR L10 OR L3 OR L11)

L19 623 SEA FILE=HCAPLUS ABB=ON L17 AND (POLYPROPYLENE? OR POLYETHYLENE? OR PE OR PP OR POLYAMIDE? OR POLYIMIDE? OR POLYOLEFIN? OR POLYESTER? OR POLYACETAL? OR POLYCARBONATE? OR POLYSULFONE? OR PVC OR POLYVINYL? OR ETHYLENE(W) VINYL?)

L20 708 SEA FILE=HCAPLUS ABB=ON L18 OR L19

L23 422068 SEA FILE=HCAPLUS ABB=ON (L13 OR NI OR TI OR CU OR AG OR AU OR PT OR FE OR CO OR CR OR W OR MO OR AL OR MG OR O K OR NA OR CA OR SR OR BA OR SI OR GE OR SB OR PB OR IN OR ZN) (4A) (METAL? OR ANOD?)

L24 2197 SEA FILE=HCAPLUS ABB=ON L23 AND L15

L26 480 SEA FILE=HCAPLUS ABB=ON L24 AND (L6 OR L7 OR L8 OR L9 OR L10 OR L3 OR L11)

L27 658 SEA FILE=HCAPLUS ABB=ON L24 AND (POLYPROPYLENE? OR POLYETHYLENE? OR PE OR PP OR POLYAMIDE? OR POLYIMIDE? OR POLYOLEFIN? OR POLYESTER? OR POLYACETAL? OR POLYCARBONATE? OR POLYSULFONE? OR PVC OR POLYVINYL? OR ETHYLENE(W) VINYL?)

L28 756 SEA FILE=HCAPLUS ABB=ON L26 OR L27

L30 60 SEA FILE=HCAPLUS ABB=ON (L20 OR L28) AND (ANOD? OR NEG? (3A) ELECTROD?)

L31 15 SEA FILE=HCAPLUS ABB=ON L30 AND ELECTROCHEMICAL?/SC, SX

L33 15 SEA FILE=HCAPLUS ABB=ON L31 OR L31

L34 48 SEA FILE=HCAPLUS ABB=ON (FIRST OR SECOND OR 2ND OR 1ST) (3A) POLYMER? (3A) ?LAYER? AND (ANOD? OR NEG? (3A) ELECTROD?)

L35 5 SEA FILE=HCAPLUS ABB=ON L34 AND METAL? (3A) ?LAYER?

L36 19 SEA FILE=HCAPLUS ABB=ON L33 OR L35

=> D L36 BIB ABS IND HITSTR 1-19

L36 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2006:648604 HCAPLUS

DN 145:106845

TI Reactive metal hydrogel/inert polymer composite **anode** and primary metal-air battery

IN Ferrando, William A.

PA The United States of America as Represented by the Secretary of the Navy, USA

SO U.S., 16 pp.

CODEN: USXXAM

DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 7070882	B1	20060704	US 2002-298516	20021119
PRAI	US 2002-298516		20021119		
AB	The invention concerns an <b>anode</b> for use in a primary metal-air battery having an alkaline or neutral salt electrolyte, the <b>anode</b> comprising: a low mol. weight reactive metal substrate; a low mol. weight reactive metal powder; and at least a two-component electrolyte resistant polymer system; the first component is an ionic conductive linearized hydrogel, the second component is an inert structural polymer matrix, the reactive metal powder is dispersed and the first component is uniformly dispersed within the second component to form a material, and the reactive metal is selected from the group consisting of magnesium, aluminum, tin, mixts. of aluminum, tin and magnesium and alloys thereof.				
INCL	429218100; 429245000; 429217000; 429206000; 427123000; 427058000; 427126100; 252182100; 264104000				
CC	52-2 ( <b>Electrochemical</b> , <b>Radiational</b> , and <b>Thermal Energy Technology</b> ) Section cross-reference(s): 38				
ST	battery <b>anode</b> reactive metal hydrogel inert polymer composite				
IT	Primary batteries (mech. rechargeable; reactive metal hydrogel/inert polymer composite <b>anode</b> and primary metal-air battery)				
IT	Metallic fibers RL: DEV (Device component use); USES (Uses) (nickel; reactive metal hydrogel/inert polymer composite <b>anode</b> and primary metal-air battery)				
IT	Hydrogels (polymeric; reactive metal hydrogel/inert polymer composite <b>anode</b> and primary metal-air battery)				
IT	Battery <b>anodes</b> (reactive metal hydrogel/inert polymer composite <b>anode</b> and primary metal-air battery)				
IT	Metals, uses RL: DEV (Device component use); USES (Uses) (reactive metal hydrogel/inert polymer composite <b>anode</b> and primary metal-air battery)				
IT	<b>Polysiloxanes</b> , uses RL: TEM (Technical or engineered material use); USES (Uses) (reactive metal hydrogel/inert polymer composite <b>anode</b> and primary metal-air battery)				
IT	Plastics, uses RL: DEV (Device component use); USES (Uses) (thermoplastics; reactive metal hydrogel/inert polymer composite <b>anode</b> and primary metal-air battery)				
IT	Aluminum alloy, base RL: DEV (Device component use); USES (Uses) (reactive metal hydrogel/inert polymer composite <b>anode</b> and primary metal-air battery)				
IT	1310-58-3, Potassium hydroxide, uses 1310-73-2, Sodium hydroxide, uses 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses 7440-02-0, Nickel, uses 7440-31-5, Tin, uses 7447-40-7, Potassium chloride, uses 7647-14-5, Sodium chloride, uses 9002-85-1, <b>Polyvinylidene chloride 9002-88-4, Polyethylene 9003-01-4, Polyacrylic acid 9003-07-0, Polypropylene 9003-53-6, Polystyrene 9011-14-7, PMMA 191877-18-6, EB50V</b> RL: DEV (Device component use); USES (Uses)				

(reactive metal hydrogel/inert polymer composite  
anode and primary metal-air battery)  
IT 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses  
7440-02-0, Nickel, uses 9002-88-4, Polyethylene  
9003-07-0, Polypropylene  
RL: DEV (Device component use); USES (Uses)  
(reactive metal hydrogel/inert polymer composite  
anode and primary metal-air battery)  
RN 7429-90-5 HCAPLUS  
CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7439-95-4 HCAPLUS  
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-02-0 HCAPLUS  
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 9002-88-4 HCAPLUS  
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1  
CMF C2 H4

$\text{H}_2\text{C}=\text{CH}_2$

RN 9003-07-0 HCAPLUS  
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1  
CMF C3 H6

$\text{H}_3\text{C}-\text{CH}=\text{CH}_2$

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
AN 2006:144677 HCAPLUS  
DN 144:195326  
TI Outer case members for secondary batteries for prevention of internal

short circuits at wider temperature range

IN Yamamura, Akira

PA Nissan Motor Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2006049219	A2	20060216	JP 2004-231451	20040806
PRAI	JP 2004-231451		20040806		

AB The members, for keeping and sealing power generation members, include **metal layers, first polymer inner**

**layers** (e.g., polypropylene), and **second polymer**

**inner layers** (e.g., polyethylene), satisfying  $T_{1p} > T_{2p}$  and  $T_{2g}$

$< T_{1g}$  ( $T_{1p}$ ,  $T_{2p}$  = m.p. of the **first** and **second**

**polymer inner layers**, resp.;  $T_{1g}$ ,  $T_{2g}$  = Tg of the

**first** and **second polymer inner layers**

, resp.). The secondary batteries show no p.d. between the **metal**

**layers** and cathode and **anode** terminals after storage at

low and high temps., and no self heat generation after overheating.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST outer case battery prevention internal short circuit; metal polymer

laminate outer case battery; polypropylene polyethylene aluminum alloy

laminate battery case

IT Secondary batteries

(outer case members including **metal layers** and

**first** and **second polymer inner**

**layers** for secondary batteries)

IT Aluminum alloy, base

RL: DEV (Device component use); USES (Uses)

(**metal layer**; outer case members including

**metal layers** and **first** and **second**

**polymer inner layers** for secondary batteries)

IT 9003-07-0, Polypropylene

RL: DEV (Device component use); USES (Uses)

(**first inner layer**; outer case members including **metal**

**layers** and **first** and **second polymer**

**inner layers** for secondary batteries)

IT 9002-88-4, Polyethylene

RL: DEV (Device component use); USES (Uses)

(**second inner layer**; outer case members including **metal**

**layers** and **first** and **second polymer**

**inner layers** for secondary batteries)

L36 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:695959 HCAPLUS

DN 143:196824

TI Batteries with suppressed leakage and high discharge capacity

IN Ishii, Haruyoshi; Saruwatari, Hidesato; Hirai, Takahiro; Takami, Norio

PA Toshiba Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 22 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2005209585 A2 20050804 JP 2004-17335 20040126  
 PRAI JP 2004-17335 20040126  
 AB The batteries, capable of discharging gases generated during discharge, have **anodes** containing **Al-** or **Mg-containing anode** active mass, water-containing solvent electrolyte solns., and water-repellent layers (e.g., PTFE) with water contact angle  $\geq 80^\circ$  at downstream parts of gas discharge passages on **anode** surfaces.  
 ICM H01M004-06  
 ICS H01M002-12; H01M004-46; H01M006-08  
 CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 38  
 ST battery **anode** aluminum magnesium leakage prevention; PTFE water repellent battery primary  
 IT Battery **anodes**  
 Battery electrolytes  
 Primary batteries  
 (batteries with suppressed leakage and high discharge capacity)  
 IT Hydrocarbons, uses  
 RL: DEV (Device component use); USES (Uses)  
 (resins, paraffin, water-repellent layer; batteries with suppressed leakage and high discharge capacity)  
 IT **Polymers**, uses  
 RL: DEV (Device component use); USES (Uses)  
 (silicon-containing, water-repellent layer; batteries with suppressed leakage and high discharge capacity)  
 IT Fluoropolymers, uses  
 RL: DEV (Device component use); USES (Uses)  
 (water-repellent layer; batteries with suppressed leakage and high discharge capacity)  
 IT 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses 11109-06-1  
 52976-41-7 57622-21-6 94197-65-6 623166-92-7  
 RL: DEV (Device component use); USES (Uses)  
 (batteries with suppressed leakage and high discharge capacity)  
 IT 96-48-0,  $\gamma$ -Butyrolactone 7732-18-5, Water, uses  
 RL: DEV (Device component use); USES (Uses)  
 (electrolyte solvent; batteries with suppressed leakage and high discharge capacity)  
 IT 9002-84-0, PTFE 9002-85-1, Poly(vinylidene chloride) **9002-86-2**  
 , **Polyvinyl** chloride 9003-53-6, Polystyrene 9011-17-0,  
 Hexafluoropropylene-vinylidene fluoride copolymer 24980-67-4,  
 Poly(ethylene trifluoride) 24981-14-4, **Polyvinyl** fluoride  
 25067-59-8, **Polyvinylcarbazole**  
 RL: DEV (Device component use); USES (Uses)  
 (water-repellent layer; batteries with suppressed leakage and high discharge capacity)  
 IT **9002-86-2, Polyvinyl** chloride  
 RL: DEV (Device component use); USES (Uses)  
 (water-repellent layer; batteries with suppressed leakage and high discharge capacity)  
 RN 9002-86-2 HCAPLUS  
 CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4

CMF C2 H3 C1

$$\text{H}_2\text{C}=\text{CH}-\text{Cl}$$

L36 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:526310 HCAPLUS

DN 144:153287

TI Enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as an electron mediator

AU Sato, Fuyuki; Togo, Makoto; Islam, Mohammed Kamrul; Matsue, Tomokazu; Kosuge, Junichi; Fukasaku, Noboru; Kurosawa, Satoshi; Nishizawa, Matsuhiko  
 CS Department of Bioengineering and Robotics, Graduate School of Engineering, Tohoku University, Sendai, Aramaki, Miyagi, Aoba-ku, 980-8579, Japan

SO Electrochemistry Communications (2005), 7(7), 643-647

CODEN: ECCMF9; ISSN: 1388-2481

PB Elsevier B.V.

DT Journal

LA English

AB To create an enzyme-based biol. fuel cell generating electricity from glucose and O<sub>2</sub>, the authors modified a glassy carbon electrode with a bi-layer polymer membrane, the inner layer containing diaphorase (Dp) and the outer, glucose dehydrogenase (GDH, an NAD<sup>+</sup>-dependent enzyme). The Dp membrane was formed from a newly synthesized 2-methyl-1,4-naphthoquinone (Vitamin K<sub>3</sub>; VK<sub>3</sub>)-based polymer. This polymer showed reversible redox activity at a potential close to that of free VK<sub>3</sub> (-0.25 V vs. Ag/AgCl saturate KCl), and served as an electron mediator of Dp for the electrocatalytic oxidation of NADH to NAD<sup>+</sup>. The addition of Ketjenblack into the Dp/VK<sub>3</sub> film enhanced the generation of NAD<sup>+</sup>. The outer GDH membrane oxidized glucose continuously using NAD<sup>+</sup> generated at the inner Dp film. To construct the glucose/O<sub>2</sub> biol. fuel cell, the authors coupled the enzyme-modified anode with a polydimethylsiloxane-coated Pt cathode. The cell's open circuit voltage was 0.62 V and its maximum power d. was 14.5 μW/cm<sup>2</sup> at 0.36 V in an air-saturated phosphate buffered saline solution (pH 7.0) at 37 °C containing 0.5 mM NADH and 10 mM glucose. Although its performance deteriorated to .apprx.4 μW/cm<sup>2</sup> over 4 days, the cell subsequently maintained this power d. for >2 wks.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 7, 35, 76

ST enzyme glucose fuel cell Vitamin K3 polyallylamine immobilized mediator

IT Geobacillus stearothermophilus

(EC 1.6.99, diaphorase from; enzyme-based glucose fuel cell using Vitamin K<sub>3</sub>-immobilized polymer as electron mediator)

IT Fuel cells

(biochem. fuel cells; enzyme-based glucose fuel cell using Vitamin K<sub>3</sub>-immobilized polymer as electron mediator)

IT Phosphates, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(buffers; enzyme-based glucose fuel cell using Vitamin K<sub>3</sub>-immobilized polymer as electron mediator)

IT Electric current-potential relationship

(cyclic voltammograms for assembled electrodes and fuel cells; enzyme-based glucose fuel cell using Vitamin K<sub>3</sub>-immobilized polymer as electron mediator)

IT Open circuit potential

(enzyme-based glucose fuel cell using Vitamin K<sub>3</sub>-immobilized polymer as electron mediator)

IT Enzymes, uses

RL: DEV (Device component use); USES (Uses)

- (enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT Graphitized carbon black  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT Electrodes  
(glassy carbon; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT Electric energy  
(power d. of assembled fuel cell; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT 874161-36-1  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(PAA-VK3 polymer membrane, electron mediator for diaphorase; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT 28826-16-6, Poly(L-lysine hydrochloride)  
RL: DEV (Device component use); USES (Uses)  
(d.p. 1109; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT 30551-89-4, Polyallylamine  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(d.p. 1226; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT 26403-72-5, Poly(ethylene glycol) diglycidyl ether  
RL: DEV (Device component use); USES (Uses)  
(d.p. 9.3, PEGDGE; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT 53-84-9, NAD+ 58-68-4, NADH 9016-00-6, Polydimethylsiloxane  
RL: DEV (Device component use); USES (Uses)  
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT 6066-82-6DP, N-Hydroxysuccinimide, reaction products with 2-(3-carboxypropyl)-3-methyl-1,4-naphthoquinone, then with polyallylamine and **polyethylene glycol diglycidyl ether** 26403-72-5DP, Poly(ethylene glycol) diglycidyl ether, reaction products with the reaction product of 2-(3-carboxypropyl)-3-methyl-1,4-naphthoquinone with N-hydroxysuccinimide, then polyallylamine 30551-89-4DP, Polyallylamine, reaction products with the reaction product of 2-(3-carboxypropyl)-3-methyl-1,4-naphthoquinone with N-hydroxysuccinimide, then with **polyethylene glycol diglycidyl ether** 82376-80-5DP, reaction products with N-hydroxysuccinimide, followed by polyallylamine and **polyethylene glycol diglycidyl ether**  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT 50-99-7, D-Glucose, uses 7440-06-4, Platinum, uses  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT 6066-82-6, N-Hydroxysuccinimide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
- IT 82376-80-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 9028-53-9, Glucose dehydrogenase  
 RL: DEV (Device component use); USES (Uses)  
 (from BAcillus sp.; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 37340-89-9, Diaphorase  
 RL: DEV (Device component use); USES (Uses)  
 (from Bacillus stearothermophilus; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 28826-16-6, Poly(L-lysine hydrochloride)  
 RL: DEV (Device component use); USES (Uses)  
 (d.p. 1109; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

RN 28826-16-6 HCAPLUS

CN L-Lysine, homopolymer, hydrochloride (9CI) (CA INDEX NAME)

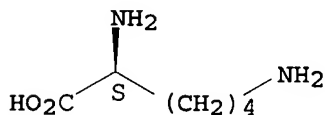
CM 1

CRN 25104-18-1  
 CMF (C6 H14 N2 O2)x  
 CCI PMS

CM 2

CRN 56-87-1  
 CMF C6 H14 N2 O2

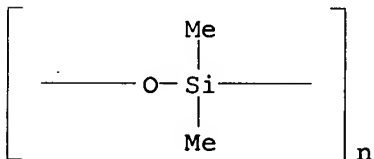
Absolute stereochemistry.



IT 9016-00-6, Polydimethylsiloxane  
 RL: DEV (Device component use); USES (Uses)  
 (enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

RN 9016-00-6 HCAPLUS

CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:1118892 HCAPLUS  
 DN 142:59744

TI **Anode** composition for lithium battery  
 IN Choi, Young-Min; Kim, Kyung-Ho; Paik, Un-Gyu  
 PA Samsung SDI Co., Ltd., S. Korea  
 SO Eur. Pat. Appl., 11 pp.  
 CODEN: EPXXDW

DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1489673	A1	20041222	EP 2004-253675	20040618
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	KR 2004110665	A	20041231	KR 2003-40085	20030620
	JP 2005011808	A2	20050113	JP 2004-173057	20040610
	CN 1574425	A	20050202	CN 2004-10055037	20040618
	US 2004258991	A1	20041223	US 2004-870993	20040621
PRAI	KR 2003-40085	A	20030620		

AB Provided are an **anode** composition for a lithium battery, and an **anode** and a lithium battery using the same. The **anode** composition can improve **anode** and battery characteristics while using water as a solvent. The **anode** composition includes an **anode** active material, a synthetic rubber binder, a cellulose-based dispersing agent, and a water-soluble anionic polyelectrolyte.

IC ICM H01M004-62  
 ICS H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium battery **anode** compn

IT Butadiene rubber, uses

RL: MOA (Modifier or additive use); USES (Uses)  
 (Me-methacrylate-grafted; **anode** composition for lithium battery)

IT Polyelectrolytes

(anionic; **anode** composition for lithium battery)

IT Battery **anodes**

(**anode** composition for lithium battery)

IT Carbon fibers, uses

Carbonaceous materials (technological products)

RL: DEV (Device component use); USES (Uses)

(**anode** composition for lithium battery)

IT Neoprene rubber, uses

RL: MOA (Modifier or additive use); USES (Uses)

(**anode** composition for lithium battery)

IT Polysiloxanes, uses

RL: MOA (Modifier or additive use); USES (Uses)

(**anode** composition for lithium battery)

IT Styrene-butadiene rubber, uses

RL: MOA (Modifier or additive use); USES (Uses)

(**anode** composition for lithium battery)

IT Synthetic rubber, uses

RL: MOA (Modifier or additive use); USES (Uses)

(**anode** composition for lithium battery)

IT Styrene-butadiene rubber, uses

RL: MOA (Modifier or additive use); USES (Uses)

(carboxy-modified; **anode** composition for lithium battery)

IT Secondary batteries

(lithium; **anode** composition for lithium battery)

IT Butadiene rubber, uses

RL: MOA (Modifier or additive use); USES (Uses)

(nitrile group-containing; **anode** composition for lithium battery)

IT 77-92-9, Citric acid, uses 87-69-4, Tartaric acid, uses 110-15-6, Succinic acid, uses 7429-90-5D, Aluminum, compound 7439-92-1D, Lead, compound 7439-95-4D, Magnesium, compound 7440-21-3D, Silicon, compound 7440-22-4D, Silver, compound 7440-28-0D, Thallium, compound 7440-31-5D, Tin, compound 7440-56-4D, Germanium, compound 7440-66-6D, Zinc, compound 7440-69-9D, Bismuth, compound 7440-74-6D, Indium, compound 7782-42-5, Graphite, uses 25087-26-7, Polymethacrylic acid  
 RL: DEV (Device component use); USES (Uses)  
 (anode composition for lithium battery)

IT 126-44-3, Citrate, uses 9000-11-7, Cmc 9003-01-4, Polyacrylic acid 9004-34-6, Cellulose, uses 9004-34-6D, Cellulose, oxyethyl derivative 9004-42-6, Carboxyethyl cellulose 9032-36-4, Aminoethyl cellulose  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (anode composition for lithium battery)

IT 9003-17-2  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (butadiene rubber, Me-methacrylate-grafted; anode composition for lithium battery)

IT 9003-17-2D, nitrile group-containing  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (butadiene rubber; anode composition for lithium battery)

IT 9010-98-4  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (neoprene rubber; anode composition for lithium battery)

IT 9003-55-8  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (styrene-butadiene rubber; anode composition for lithium battery)

IT 7429-90-5D, Aluminum, compound 7439-92-1D, Lead, compound 7439-95-4D, Magnesium, compound 7440-22-4D, Silver, compound 7440-56-4D, Germanium, compound 7440-66-6D, Zinc, compound 7440-74-6D, Indium, compound  
 RL: DEV (Device component use); USES (Uses)  
 (anode composition for lithium battery)

RN 7429-90-5 HCAPLUS  
 CN Aluminum (8CI, 9CI) (CA INDEX NAME)

## Al

RN 7439-92-1 HCAPLUS  
 CN Lead (8CI, 9CI) (CA INDEX NAME)

## Pb

RN 7439-95-4 HCAPLUS  
 CN Magnesium (8CI, 9CI) (CA INDEX NAME)

## Mg

RN 7440-22-4 HCAPLUS  
 CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 7440-56-4 HCAPLUS  
CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)

Ge

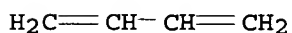
RN 7440-66-6 HCAPLUS  
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

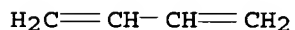
RN 7440-74-6 HCAPLUS  
CN Indium (8CI, 9CI) (CA INDEX NAME)

In

IT 9003-17-2  
RL: MOA (Modifier or additive use); USES (Uses)  
(butadiene rubber, Me-methacrylate-grafted; **anode** composition for lithium battery)  
RN 9003-17-2 HCAPLUS  
CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)  
CM 1  
CRN 106-99-0  
CMF C4 H6



IT 9003-17-2D, nitrile group-containing  
RL: MOA (Modifier or additive use); USES (Uses)  
(butadiene rubber; **anode** composition for lithium battery)  
RN 9003-17-2 HCAPLUS  
CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)  
CM 1  
CRN 106-99-0  
CMF C4 H6



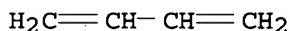
IT 9003-55-8  
RL: MOA (Modifier or additive use); USES (Uses)  
(styrene-butadiene rubber; **anode** composition for lithium battery)  
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

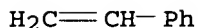
CMF C4 H6



CM 2

CRN 100-42-5

CMF C8 H8



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:1036523 HCAPLUS

DN 142:9264

TI Anode for rechargeable lithium battery

IN Cho, Chung-Kun; Hwang, Duck-Chul; Hwang, Seung-Sik; Lee, Sang-Mock

PA Samsung SDI Co., Ltd., S. Korea

SO U.S. Pat. Appl. Publ., 9 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

*application*

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004241549	A1	20041202	US 2004-776229	20040212
	KR 2004102436	A	20041208	KR 2003-33819	20030527
	JP 2004356082	A2	20041216	JP 2003-359504	20031020
	CN 1574424	A	20050202	CN 2004-10047713	20040305
PRAI	KR 2003-33819	A	20030527		

AB The anode comprises a first polymer layer, a second polymer layer on the first polymer layer, a metal layer on the second polymer layer and an anode active material layer on the metal layer.

IC ICM H01M002-16

ICS H01M004-66; H01M004-40

INCL 429246000; 429245000; 429231950

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38, 49

ST secondary lithium battery anode

IT Battery anodes

Laminated materials

(anodes for secondary lithium batteries)

IT Fluoropolymers, uses

Polyamides, uses

Polycarbonates, uses  
 Polyesters, uses  
 Polyimides, uses  
 Polyolefins  
 Polyoxyalkylenes, uses  
 Polyoxymethylenes, uses  
 Polysulfones, uses  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (anodes for secondary lithium batteries)

IT Polysiloxanes, uses  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (aralkyl, halo; anodes for secondary lithium batteries)

IT Coating process  
 (gap, knife, slot-die; anodes for secondary lithium batteries)

IT Secondary batteries  
 (lithium; anodes for secondary lithium batteries)

IT Alkadienes  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (polymers; anodes for secondary lithium batteries)

IT Coating process  
 (roller; anodes for secondary lithium batteries)

IT Coating process  
 (spray; anodes for secondary lithium batteries)

IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-92-1, Lead, uses 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-06-4, Platinum, uses 7440-09-7, Potassium, uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-23-5, Sodium, uses 7440-24-6, Strontium, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-36-0, Antimony, uses 7440-39-3, Barium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-56-4, Germanium, uses 7440-57-5, Gold, uses 7440-66-6, Zinc, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses 9002-86-2, PVC 9002-88-4, Polyethylene 9003-07-0, Polypropylene 24937-78-8, Ethylene vinyl acetate copolymer 25038-59-9, uses 25067-34-9, Ethylene vinyl alcohol copolymer  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (anodes for secondary lithium batteries)

IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-92-1, Lead, uses 7439-95-4, Magnesium, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-06-4, Platinum, uses 7440-09-7, Potassium, uses 7440-22-4, Silver, uses 7440-23-5, Sodium, uses 7440-24-6, Strontium, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-36-0, Antimony, uses 7440-39-3, Barium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-56-4, Germanium, uses 7440-57-5, Gold, uses 7440-66-6, Zinc, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses 9002-86-2, PVC 9002-88-4, Polyethylene 9003-07-0,

**Polypropylene 24937-78-8, Ethylene vinyl acetate copolymer 25038-59-9, uses 25067-34-9, Ethylene vinyl alcohol copolymer**  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(anodes for secondary lithium batteries)

RN 7429-90-5 HCAPLUS  
CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7439-89-6 HCAPLUS  
CN Iron (7CI, 8CI, 9CI) (CA INDEX NAME)

Fe

RN 7439-92-1 HCAPLUS  
CN Lead (8CI, 9CI) (CA INDEX NAME)

Pb

RN 7439-95-4 HCAPLUS  
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7439-98-7 HCAPLUS  
CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

Mo

RN 7440-02-0 HCAPLUS  
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 7440-06-4 HCAPLUS  
CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

RN 7440-09-7 HCAPLUS  
CN Potassium (8CI, 9CI) (CA INDEX NAME)

K

RN 7440-22-4 HCAPLUS  
CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 7440-23-5 HCAPLUS  
CN Sodium (8CI, 9CI) (CA INDEX NAME)

Na

RN 7440-24-6 HCAPLUS  
CN Strontium (8CI, 9CI) (CA INDEX NAME)

Sr

RN 7440-32-6 HCAPLUS  
CN Titanium (8CI, 9CI) (CA INDEX NAME)

Ti

RN 7440-33-7 HCAPLUS  
CN Tungsten (8CI, 9CI) (CA INDEX NAME)

W

RN 7440-36-0 HCAPLUS  
CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

RN 7440-39-3 HCAPLUS  
CN Barium (8CI, 9CI) (CA INDEX NAME)

Ba

RN 7440-47-3 HCAPLUS  
CN Chromium (8CI, 9CI) (CA INDEX NAME)

Cr

RN 7440-48-4 HCAPLUS  
CN Cobalt (8CI, 9CI) (CA INDEX NAME)

Co

RN 7440-50-8 HCAPLUS  
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-56-4 HCAPLUS  
CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)

Ge

RN 7440-57-5 HCAPLUS  
CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

RN 7440-66-6 HCAPLUS  
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7440-70-2 HCAPLUS  
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

RN 7440-74-6 HCAPLUS  
CN Indium (8CI, 9CI) (CA INDEX NAME)

In

RN 9002-86-2 HCAPLUS  
CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4  
CMF C2 H3 Cl

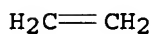
$\text{H}_2\text{C}=\text{CH}-\text{Cl}$

RN 9002-88-4 HCAPLUS  
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1

CMF C2 H4

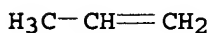


RN 9003-07-0 HCAPLUS  
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6

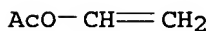


RN 24937-78-8 HCAPLUS  
CN Acetic acid ethenyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 108-05-4

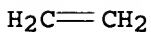
CMF C4 H6 O2



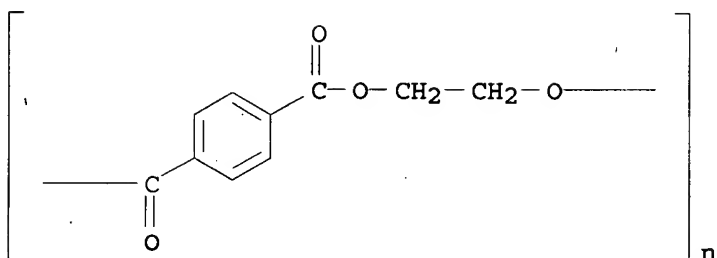
CM 2

CRN 74-85-1

CMF C2 H4



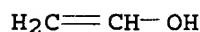
RN 25038-59-9 HCAPLUS  
CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25067-34-9 HCAPLUS  
CN Ethenol, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5  
CMF C2 H4 O



CM 2

CRN 74-85-1  
CMF C2 H4



L36 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:842778 HCAPLUS  
DN 141:352694  
TI Metal air battery  
IN Bando, Naomi; Iwahisa, Masahiro  
PA Toshiba Battery Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 11 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004288572	A2	20041014	JP 2003-82127	20030325
PRAI	JP 2003-82127		20030325		
AB	The title battery uses a laminated sheet to make the outer container and is characterized by having low cost and high capacity. The battery comprises a cathode, an <b>anode</b> , and a separator sandwiched by the electrodes. The laminated sheet is made using composite synthetic resin. The laminated sheet on the <b>anode</b> side has at least one layer containing $\geq 1$ air holes, at least one layer made of hydrophobic membrane (fluoride resin), and a layer made of O selectively permeable material.				
IC	ICM H01M012-06				
CC	52-1 (Electrochemical, Radiational, and Thermal Energy				

Technology)  
 Section cross-reference(s): 76  
 ST metal air battery laminated sheet composite synthetic resin  
 IT Plastics, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (composite; metal air battery having low cost and high capacity)  
 IT Resins  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (fluoride; metal air battery having low cost and high capacity)  
 IT Fluoropolymers, uses  
 Polyamides, uses  
 Polysiloxanes, uses  
 RL: DEV (Device component use); USES (Uses)  
 (metal air battery having low cost and high capacity)  
 IT Primary batteries  
 (metal air; metal air battery having low cost and high capacity)  
 IT 7429-90-5, Aluminum, uses 9002-84-0, Polytetrafluoroethylene  
 9003-07-0, Polypropylene  
 RL: DEV (Device component use); USES (Uses)  
 (metal air battery having low cost and high capacity)  
 IT 7429-90-5, Aluminum, uses 9003-07-0,  
 Polypropylene  
 RL: DEV (Device component use); USES (Uses)  
 (metal air battery having low cost and high capacity)  
 RN 7429-90-5 HCAPLUS  
 CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 9003-07-0 HCAPLUS  
 CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1  
 CMF C3 H6

$$\text{H}_3\text{C}-\text{CH}=\text{CH}_2$$

L36 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:471092 HCAPLUS  
 DN 139:29482  
 TI Solid electrolytic capacitors and manufacture of capacitors thereof  
 IN Inoue, Kazufumi; Kikuchi, Masayuki; Yamamoto, Satoru; Oshima, Masashi  
 PA Japan Carlit Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2003173933	A2	20030620	JP 2001-374061	20011207
PRAI	JP 2001-374061		20011207		
AB	The title manufacturing of high-withstand voltage capacitors involves process				

sequence (A) or (B), wherein (A) involves (1) forming a conductive polymer layer over a dielec. film on a valve metal layer and (2) controlling the conductivity in the conductive polymer to 10-2.apprx.10-10 S/cm by oxidation, reduction, heat-treatment, or cathode-polarization in an electrolyte solution or (B) involves (1) forming an undoped conductive polymer layer as a 1st solid electrolyte layer having its conductivity 10-2.apprx.10-10 S/cm and forming a prior-art conductive polymer film as a 2nd solid electrolyte layer. The manufacturing process provides the capacitors with improved withstand voltage without increase of equivalent-series resistance (ESR).

- IC ICM H01G009-032
- ICS H01G009-00
- CC 76-10 (Electric Phenomena)
- Section cross-reference(s): 38
- ST polymer conductor solid electrolyte capacitor withstand voltage ESR
- IT Dielectric polarization
  - (cathode; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)
- IT Conducting polymers
  - (electrolyte layer; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)
- IT Electric resistance
  - (equivalent-series; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)
- IT Heat treatment
  - Oxidation
  - Reduction
    - (for conductivity controlling of polymer conductor; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)
- IT Solid electrolytes
  - (polymer; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)
- IT Electrolytic capacitors
  - (solid; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)
- IT Breakdown voltage
  - (withstand; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)
- IT 30604-81-0, Polypyrrole
  - RL: DEV (Device component use); PRP (Properties); USES (Uses)
  - (conductive polymer film; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)
- IT 7429-90-5, Aluminum, properties
  - RL: DEV (Device component use); PRP (Properties); USES (Uses)
  - (etched film, anode; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)

L36 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:17751 HCAPLUS  
 DN 138:42089  
 TI Packaging methods and fabrication techniques for making electrochemical cells and multicell batteries  
 IN Klein, Martin G.; Ralston, Paula; Plivelich, Robert  
 PA Electro Energy, Inc., USA  
 SO U.S., 20 pp.  
 CODEN: USXXAM

DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6503658	B1	20030107	US 2001-902871	20010711
	US 2003013015	A1	20030116		
	CA 2453558	AA	20030123	CA 2002-2453558	20020628
	WO 2003007415	A1	20030123	WO 2002-US20368	20020628
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP	1419549	A1	20040519	EP 2002-756320	20020628
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2004523091	T2	20040729	JP 2003-513073	20020628
	CN 1620735	A	20050525	CN 2002-817670	20020628
	TW 571457	B	20040111	TW 2002-91115341	20020710
	US 2003138691	A1	20030724	US 2003-337816	20030106
	US 6887620	B2	20050503		
PRAI	US 2001-902871	A	20010711		
	WO 2002-US20368	W	20020628		

AB The bipolar electrochem. battery of the invention comprises: a stack of at least two electrochem. cells elec. arranged in series with the pos. face of each cell contacting the neg. face of an adjacent cell, wherein each of the cells comprises (a) a **neg. electrode**; (b) a pos. electrode; (c) a separator between the electrodes, wherein the separator includes an electrolyte; (d) a first elec. conductive lamination comprising a first inner **metal layer** and a **first polymeric outer layer**, the **first polymeric outer layer** having at least one perforation therein to expose the first inner **metal layer**, the first elec. conductive lamination being in elec. contact with the outer face of the **neg. electrode**; and (e) a second elec. conductive lamination comprising a second inner **metal layer** and a **second polymeric outer layer**, the **second polymeric outer layer** having at least one perforation therein to expose the second inner **metal layer**, the second elec. conductive lamination being in elec. contact with the outer face of the pos. electrode; wherein the first and second laminations are sealed peripherally to each other to form an enclosure including the electrodes, the separator and the electrolyte.

IC ICM H01M010-18

ICS H01M006-48; H01M006-00

INCL 429210000; 429157000; 429162000; 429124000; 429127000; 429082000; 029623100; 029623300

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 72

ST battery bipolar fabrication packaging method; electrochem cell fabrication packaging method

IT Epoxy resins, uses

Tar

RL: TEM (Technical or engineered material use); USES (Uses)

(binder; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Rubber, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (cement, binder; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Electric apparatus  
 (electrochem.; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Polysulfones, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (layer; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Battery **anodes**  
 Battery cathodes  
 Compression  
 Packaging process  
 Primary batteries  
 Secondary batteries  
 (packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Hydrides  
 Rare earth alloys  
 RL: DEV (Device component use); USES (Uses)  
 (packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Cement  
 (rubber, binder; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT 1309-42-8, Magnesium hydroxide 1309-48-4, Magnesium oxide, uses  
 1310-65-2, Lithium hydroxide 1313-99-1, Nickel oxide nio, uses  
 1344-69-0, Copper hydroxide 1344-70-3, Copper oxide 7439-95-4,  
 Magnesium, uses 7439-96-5, Manganese, uses 7440-48-4, Cobalt, uses  
 7782-44-7, Oxygen, uses 11104-61-3, Cobalt oxide 11113-74-9, Nickel  
 hydroxide 11129-60-5, Manganese oxide 12057-24-8, Lithium oxide, uses  
 12626-88-9, Manganese hydroxide 12653-71-3, Mercury oxide 12672-51-4,  
 Cobalt hydroxide 12673-77-7, Silver hydroxide 20667-12-3, Silver oxide  
 39321-13-6, Mercury hydroxide  
 RL: DEV (Device component use); USES (Uses)  
 (cathodes; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7440-02-0, Nickel,  
 uses 7440-22-4, Silver, uses 7440-50-8, Copper, uses 9002-86-2,  
 Polyvinyl chloride 9002-88-4, Polyethylene 9003-07-0, Polypropylene  
 12597-69-2, Steel, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (layer; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT 1333-74-0, Hydrogen, uses 7439-89-6, Iron, uses 7440-43-9, Cadmium,  
 uses 7440-66-6, Zinc, uses 7580-67-8, Lithium hydride 37187-84-1,  
 Nickel hydride 37251-25-5, Copper hydride 64296-66-8, Iron hydride  
 RL: DEV (Device component use); USES (Uses)  
 (packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT 7440-44-0, Carbon, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (polyvinyl chloride filled with; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:928094 HCAPLUS  
 DN 137:387171  
 TI Methods related to fuel cell electrode pair and stack assemblies  
 IN Mallari, Jonathan C.; Snyder, Suzanne M.; Chung, Vinh; Petrovic, Slobodan  
 PA Neah Power Systems, Inc., USA  
 SO U.S. Pat. Appl. Publ., 16 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002182479	A1	20021205	US 2002-147135	20020515
	US 6811916	B2	20041102		
	US 2005003263	A1	20050106	US 2004-893424	20040716
	US 7118822	B2	20061010		
PRAI	US 2001-291202P	P	20010515		
	US 2002-147135	A1	20020515		

AB Disclosed herein are fuel cell systems and, more specifically, fuel cell electrode pair and stack assemblies and various methods relating thereto. In one embodiment, the present invention is directed to a fuel cell electrode pair assembly adapted for use with a fuel cell system, wherein the electrode pair assembly comprises an **anode** structure derived from a first silicon substrate and an opposing cathode structure derived from a second silicon substrate, wherein at least (i) the **anode** structure comprises one or more discrete **anodic** porous active regions disposed across a top surface, or (ii) the cathode structure comprises one or more discrete cathodic porous active regions disposed across a top surface, and wherein the **anode** structure and the cathode structure each have at least one adjoining support member made of silicon, one or more plastics, or one or more glasses, and wherein the at least one adjoining support member of the **anode** structure and the at least one adjoining support member of the cathode structure have interfacing surfaces that are bonded together with an optional interposing binding material and with at least one selectively positioned bond to thereby form a hermetic seal, wherein the at least one selectively positioned bond is selected from the group consisting of a silicon-metal eutectic-silicon bond, a silicon-frit-silicon bond, a silicon-metal-silicon microwave bond, a **silicon-polymer** adhesive-silicon bond, a **silicon-polymer** adhesive-plastic bond, a **silicon-polymer** adhesive-glass bond, or a silicon-glass **anodic** bond.

IC ICM H01M004-86

INCL 429044000; 429042000

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST fuel cell electrode pair stack assembly

IT Fluoropolymers, uses

RL: MOA (Modifier or additive use); USES (Uses)  
 (adhesive; methods related to fuel cell electrode pair and stack assemblies)

IT Metals, uses

RL: MOA (Modifier or additive use); USES (Uses)  
 (binders; methods related to fuel cell electrode pair and stack assemblies)

IT Polyoxyalkylenes, uses

RL: MOA (Modifier or additive use); USES (Uses)

(fluorine- and sulfo-containing, ionomers; methods related to fuel cell electrode pair and stack assemblies)

IT Adhesion, physical  
(layer; methods related to fuel cell electrode pair and stack assemblies)

IT Binders  
Dielectric films  
Fuel cell **anodes**  
Fuel cell cathodes  
Fuel cells  
Interface  
Seals (parts)  
(methods related to fuel cell electrode pair and stack assemblies)

IT Borosilicate glasses  
Epoxy resins, uses  
  **Polyimides**, uses  
  **Polysiloxanes**, uses  
  **Polysulfones**, uses  
Polythiophenylenes  
RL: TEM (Technical or engineered material use); USES (Uses)  
(methods related to fuel cell electrode pair and stack assemblies)

IT Fluoropolymers, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(polyoxyalkylene-, sulfo-containing, ionomers; methods related to fuel cell electrode pair and stack assemblies)

IT Ionomers  
RL: MOA (Modifier or additive use); USES (Uses)  
(polyoxyalkylenes, fluorine- and sulfo-containing; methods related to fuel cell electrode pair and stack assemblies)

IT Frits  
(silicate; methods related to fuel cell electrode pair and stack assemblies)

IT Bond  
(silicon-frit-silicon; methods related to fuel cell electrode pair and stack assemblies)

IT Bond  
(silicon-glass **anodic**; methods related to fuel cell electrode pair and stack assemblies)

IT Bond  
(silicon-metal eutectic-silicon; methods related to fuel cell electrode pair and stack assemblies)

IT Bond  
(silicon-metal-silicon microwave; methods related to fuel cell electrode pair and stack assemblies)

IT Bond  
(**silicon-polymer** adhesive-glass; methods related to fuel cell electrode pair and stack assemblies)

IT Bond  
(**silicon-polymer** adhesive-plastic; methods related to fuel cell electrode pair and stack assemblies)

IT Bond  
(**silicon-polymer** adhesive-silicon;  
methods related to fuel cell electrode pair and stack assemblies)

IT Glass, uses  
Plastics, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(substrate; methods related to fuel cell electrode pair and stack assemblies)

IT 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-47-3, Chromium, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
(adhesion layer; methods related to fuel cell electrode pair and stack assemblies)

IT 116-14-3, Tetrafluoroethylene, uses 694-87-1, Benzocyclobutane  
31900-57-9, Polydimethylsiloxane 37697-64-6,  
Perfluoro-2,2-dimethyl-1,3-dioxole  
RL: MOA (Modifier or additive use); USES (Uses)  
(adhesive; methods related to fuel cell electrode pair and stack assemblies)

IT 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7440-22-4, Silver,  
uses 7440-31-5, Tin, uses 7440-50-8, Copper, uses 7440-57-5, Gold,  
uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(binders; methods related to fuel cell electrode pair and stack assemblies)

IT 7440-02-0, Nickel, uses 7440-74-6, Indium, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(bond metal; methods related to fuel cell electrode pair and stack assemblies)

IT 7631-86-9, Silica, uses 12033-89-5, Silicon nitride, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(dielec. layer; methods related to fuel cell electrode pair and stack assemblies)

IT 11109-42-5  
RL: TEM (Technical or engineered material use); USES (Uses)  
(eutectic; methods related to fuel cell electrode pair and stack assemblies)

IT 9041-80-9, Polyphenylene ether  
RL: TEM (Technical or engineered material use); USES (Uses)  
(methods related to fuel cell electrode pair and stack assemblies)

IT 7440-21-3, Silicon, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(substrate; methods related to fuel cell electrode pair and stack assemblies)

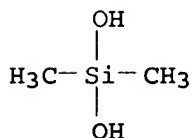
IT 31900-57-9, Polydimethylsiloxane  
RL: MOA (Modifier or additive use); USES (Uses)  
(adhesive; methods related to fuel cell electrode pair and stack assemblies)

RN 31900-57-9 HCAPLUS  
CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8

CMF C2 H8 O2 Si



IT 7440-02-0, Nickel, uses 7440-74-6, Indium, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(bond metal; methods related to fuel cell electrode pair and stack assemblies)

RN 7440-02-0 HCAPLUS  
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 7440-74-6 HCAPLUS  
 CN Indium (8CI, 9CI) (CA INDEX NAME)

In

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:833141 HCAPLUS  
 DN 137:327452  
 TI Zinc anode matrix for rechargeable alkaline battery  
 IN Cheiky, Michael; Hago, Wilson  
 PA Zinc Matrix Power, Inc., USA  
 SO PCT Int. Appl., 17 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002086992	A1	20021031	WO 2002-US12441	20020419
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2002177040	A1	20021128	US 2001-839668	20010419
US 6582851	B2	20030624		
GB 2388954	A1	20031126	GB 2003-16055	20020419
GB 2388954	B2	20041013		
EP 1380060	A1	20040114	EP 2002-723918	20020419
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
DE 10296642	T	20040422	DE 2002-10296642	20020419
JP 2004527085	T2	20040902	JP 2002-584407	20020419
DK 2003001441	A5	20031002	DK 2003-1441	20031002
PRAI US 2001-839668	A	20010419		
WO 2002-US12441	W	20020419		

AB An anode paste material is disclosed for use in zinc-based batteries that is designed to reduce zinc ion diffusion and resultant electrode shape change as well as zinc dendrite formation while optionally allowing for hydrogen permeability through the matrix comprising a regenerated cellulose film containing domains of hydrogen permeable polymer, particles of zinc and zinc oxide surrounded by hydrocarbon beads.

IC ICM H01M004-42  
 ICS H01M004-48

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST zinc **anode** matrix rechargeable alk battery  
 IT Secondary batteries  
     (Ag-Zn; zinc **anode** matrix for  
     rechargeable alkaline battery)  
 IT Permeability  
     (H; zinc **anode** matrix for rechargeable alkaline battery)  
 IT Hydrocarbons, uses  
     RL: MOA (Modifier or additive use); USES (Uses)  
     (beads; zinc **anode** matrix for rechargeable alkaline battery)  
 IT Synthetic rubber, uses  
     RL: MOA (Modifier or additive use); USES (Uses)  
     (hydrocarbon; zinc **anode** matrix for rechargeable alkaline  
     battery)  
 IT Battery **anodes**  
     (zinc **anode** matrix for rechargeable alkaline battery)  
 IT **Polyolefins**  
     Polyoxyphenylenes  
     **Polysiloxanes**, uses  
     RL: MOA (Modifier or additive use); USES (Uses)  
     (zinc **anode** matrix for rechargeable alkaline battery)  
 IT 9002-88-4, **Polyethylene** 9003-07-0,  
     **Polypropylene**  
     RL: MOA (Modifier or additive use); USES (Uses)  
     (beads; zinc **anode** matrix for rechargeable alkaline battery)  
 IT 1333-74-0, Hydrogen, processes  
     RL: PEP (Physical, engineering or chemical process); PYP (Physical  
     process); PROC (Process)  
     (permeability; zinc **anode** matrix for rechargeable alkaline  
     battery)  
 IT 1310-58-3, Potassium hydroxide (K(OH)), uses 1314-13-2, Zinc oxide, uses  
     7440-22-4, Silver, uses 7440-66-6, Zinc, uses  
     RL: DEV (Device component use); USES (Uses)  
     (zinc **anode** matrix for rechargeable alkaline battery)  
 IT 9004-34-6, Cellulose, uses 9004-57-3, Ethyl cellulose 9016-80-2,  
     Polymethylpentene  
     RL: MOA (Modifier or additive use); USES (Uses)  
     (zinc **anode** matrix for rechargeable alkaline battery)  
 IT 9002-88-4, **Polyethylene** 9003-07-0,  
     **Polypropylene**  
     RL: MOA (Modifier or additive use); USES (Uses)  
     (beads; zinc **anode** matrix for rechargeable alkaline battery)  
 RN 9002-88-4 HCAPLUS  
 CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1

CMF C2 H4

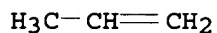
H<sub>2</sub>C=CH<sub>2</sub>

RN 9003-07-0 HCAPLUS  
 CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IT 7440-22-4, Silver, uses 7440-66-6, Zinc, uses  
 RL: DEV (Device component use); USES (Uses)  
 (zinc anode matrix for rechargeable alkaline battery)  
 RN 7440-22-4 HCAPLUS  
 CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 7440-66-6 HCAPLUS  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2001:885609 HCAPLUS  
 DN 136:21971  
 TI Embossed current collector separator for an on-vehicle fuel cell for an  
 automobile  
 IN Gao, Yunzhi; Kunimoto, Akira  
 PA K. K. Riken, Japan  
 SO Eur. Pat. Appl., 26 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1160900	A2	20011205	EP 2001-304644	20010525
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001338658	A2	20011207	JP 2000-157189	20000526
	JP 3404363	B2	20030506		
	JP 2001351643	A2	20011221	JP 2000-169559	20000606
	JP 3387046	B2	20030317		
	US 2002009630	A1	20020124	US 2001-865601	20010529
	US 6852438	B2	20050208		
PRAI	JP 2000-157189	A	20000526		
	JP 2000-169559	A	20000606		
AB	A bipolar current collector separator for a fuel cell is composed of a metal plate having flow channels and contact faces that come into contact with electrodes or collectors, wherein a corrosion-resistant layer such as an anodized aluminum layer and a heat-resistant polymer layer is disposed on each of the flow channels.				
IC	ICM H01M008-02				
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology)				
	Section cross-reference(s): 38, 56				
ST	fuel cell embossed current collector separator; automobile fuel cell				

- embossed current collector separator
- IT Rayon, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (acrylic acid-grafted; embossed current collector separator for on-vehicle fuel cell for automobile)
- IT Synthetic polymeric fibers, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (acrylic acid-rayon, graft; embossed current collector separator for on-vehicle fuel cell for automobile)
- IT **Polyamides**, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (aromatic; embossed current collector separator for on-vehicle fuel cell for automobile)
- IT Automobiles
  - Fuel cell electrodes
  - Fuel cell separators
  - Fuel cells
  - Porosity
    - (embossed current collector separator for on-vehicle fuel cell for automobile)
- IT Carbon black, uses
  - RL: MOA (Modifier or additive use); USES (Uses)
  - (embossed current collector separator for on-vehicle fuel cell for automobile)
- IT Acrylic polymers, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (embossed current collector separator for on-vehicle fuel cell for automobile)
- IT Fluoropolymers, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (embossed current collector separator for on-vehicle fuel cell for automobile)
- IT **Polycarbonates**, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (embossed current collector separator for on-vehicle fuel cell for automobile)
- IT **Polyesters**, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (embossed current collector separator for on-vehicle fuel cell for automobile)
- IT **Polyimides**, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (embossed current collector separator for on-vehicle fuel cell for automobile)
- IT **Polysiloxanes**, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (embossed current collector separator for on-vehicle fuel cell for automobile)
- IT **Polysulfones**, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (embossed current collector separator for on-vehicle fuel cell for automobile)
- IT Polyurethanes, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (embossed current collector separator for on-vehicle fuel cell for automobile)
- IT **Polyvinyl** butyrals
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (embossed current collector separator for on-vehicle fuel cell for automobile)

IT Rayon, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (embossed current collector separator for on-vehicle fuel cell for automobile)

IT Vinal fibers  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (embossed current collector separator for on-vehicle fuel cell for automobile)

IT Polyoxyalkylenes, uses  
 RL: DEV (Device component use); USES (Uses)  
 (fluorine- and sulfo-containing, ionomers; embossed current collector separator for on-vehicle fuel cell for automobile)

IT **Polysulfones**, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polyether-; embossed current collector separator for on-vehicle fuel cell for automobile)

IT Vinyl compounds, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polymers; embossed current collector separator for on-vehicle fuel cell for automobile)

IT Fluoropolymers, uses  
 RL: DEV (Device component use); USES (Uses)  
 (polyoxyalkylene-, sulfo-containing, ionomers; embossed current collector separator for on-vehicle fuel cell for automobile)

IT Ionomers  
 RL: DEV (Device component use); USES (Uses)  
 (polyoxyalkylenes, fluorine- and sulfo-containing; embossed current collector separator for on-vehicle fuel cell for automobile)

IT Polyethers, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (**polysulfone**-; embossed current collector separator for on-vehicle fuel cell for automobile)

IT Viscose  
 (rayon; embossed current collector separator for on-vehicle fuel cell for automobile)

IT Aluminum alloy, base  
 RL: DEV (Device component use); USES (Uses)  
 (embossed current collector separator for on-vehicle fuel cell for automobile)

IT **7429-90-5D, Aluminum, anodized**  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (corrosion-resistant layer; embossed current collector separator for on-vehicle fuel cell for automobile)

IT 7429-90-5, Aluminum, uses 7440-32-6, Titanium, uses 11121-90-7, Carbon steel, uses  
 RL: DEV (Device component use); USES (Uses)  
 (embossed current collector separator for on-vehicle fuel cell for automobile)

IT 409-21-2, Silicon carbide sic, uses 552-30-7, Trimellitic anhydride 7439-88-5, Iridium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-22-4, Silver, uses 7440-44-0, Carbon, uses 7440-57-5, Gold, uses 9002-84-0, Ptfе 9002-86-2, Pvc 9002-88-4,  
**Polyethylene 9003-07-0, Polypropylene 9003-53-6, Polystyrene 9003-70-7D, Divinylbenzene-styrene copolymer, chlorinated 9011-06-7, Vinyl chloride-vinylidene chloride copolymer i1110-72-8 24937-79-9, Polyvinylidene fluoride 24968-12-5, Polybutylene terephthalate 28630-21-9 37258-17-6 37264-56-5 52831-04-6, Acrylic acid- $\alpha$ -methylstyrene-styrene copolymer 52974-15-9 53579-45-6 .61345-12-8 62725-48-8,**

Decanamide, homopolymer 63174-62-9 75022-54-7 95627-08-0  
108265-62-9 377761-62-1

RL: TEM (Technical or engineered material use); USES (Uses)  
(embossed current collector separator for on-vehicle fuel cell for automobile)

IT 7429-90-5D, Aluminum, anodized

RL: TEM (Technical or engineered material use); USES (Uses)  
(corrosion-resistant layer; embossed current collector separator for on-vehicle fuel cell for automobile)

RN 7429-90-5 HCAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

IT 9002-86-2, Pvc 9002-88-4, Polyethylene

9003-07-0, Polypropylene 24968-12-5,  
Polybutylene terephthalate 28630-21-9

RL: TEM (Technical or engineered material use); USES (Uses)  
(embossed current collector separator for on-vehicle fuel cell for automobile)

RN 9002-86-2 HCAPLUS

CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4

CMF C2 H3 Cl

$\text{H}_2\text{C}=\text{CH}-\text{Cl}$

RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1

CMF C2 H4

$\text{H}_2\text{C}=\text{CH}_2$

RN 9003-07-0 HCAPLUS

CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1

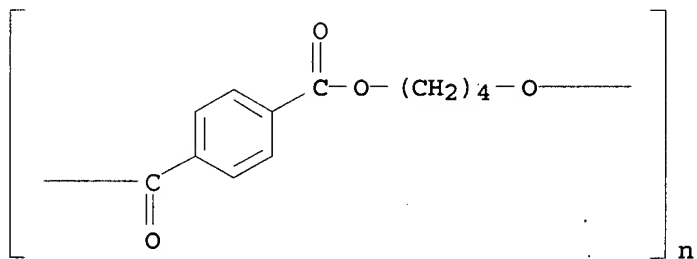
CMF C3 H6

$\text{H}_3\text{C}-\text{CH}=\text{CH}_2$

RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)

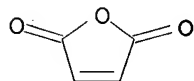
NAME)



RN 28630-21-9 HCAPLUS  
 CN 2,5-Furandione, polymer with 4,4'-methylenebis[benzenamine] (9CI) (CA  
 INDEX NAME)

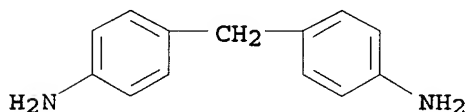
CM 1

CRN 108-31-6  
 CMF C4 H2 O3



CM 2

CRN 101-77-9  
 CMF C13 H14 N2



L36 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2001:101464 HCAPLUS  
 DN 134:150095  
 TI Magnesium-based primary and secondary batteries  
 IN Di Noto, Vito; Fauri, Maurizio  
 PA Universita' Degli Studi Di Padova, Italy  
 SO PCT Int. Appl., 38 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001009972	A1	20010208	WO 2000-EP7221	20000727
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,				

LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,  
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,  
YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,  
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

IT 1307220 B1 20011029 IT 1999-PD179 19990729

CA 2380509 AA 20010208 CA 2000-2380509 20000727

EP 1205003 A1 20020515 EP 2000-949410 20000727

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, IE, SI,  
LT, LV, FI, RO, MK, CY, AL

JP 2003506832 T2 20030218 JP 2001-514499 20000727

RU 2269841 C2 20060210 RU 2002-102077 20000727

PRAI IT 1999-PD179 A 19990729

WO 2000-EP7221 W 20000727

AB The batteries disclosed herein are of the type comprising at least one **anode**, at least one cathode and at least one electrolyte, and current collectors, in which at least the **anode** is magnesium-based, and optionally also the cathode and the electrolyte contain magnesium. Assembly of the batteries involves the preparation of the individual components and the interposition of a thin layer of electrolyte between the magnesium-based **anode** and the cathode.

IC ICM H01M010-40

ICS H01M004-02

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST battery magnesium based

IT **Polysiloxanes**, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
(Me; magnesium-based primary and secondary batteries)

IT Silanes

RL: TEM (Technical or engineered material use); USES (Uses)  
(alkoxy, **anode** stabilized with treatment with;  
magnesium-based primary and secondary batteries)

IT Polyoxyalkylenes, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
(fluorinated; magnesium-based primary and secondary batteries)

IT Polyoxyalkylenes, uses

RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(magnesium chloride salt P2O5-acidified; magnesium-based primary and  
secondary batteries)

IT Battery **anodes**

Battery cathodes

Battery electrolytes

Polymer electrolytes

Primary batteries

Secondary batteries

(magnesium-based primary and secondary batteries)

IT **Polycarbonates**, uses

Polyoxyalkylenes, uses

RL: DEV (Device component use); TEM (Technical or engineered material  
use); USES (Uses)  
(magnesium-based primary and secondary batteries)

IT Polymers, uses

RL: MOA (Modifier or additive use); USES (Uses)  
(magnesium-based primary and secondary batteries)

IT Polyphosphates

RL: RCT (Reactant); RACT (Reactant or reagent)

- (magnesium-based primary and secondary batteries)
- IT Polyoxyalkylenes, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (magnesium-based primary and secondary batteries)
- IT Polyphosphazenes
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (magnesium-based primary and secondary batteries)
- IT Peroxides, reactions
  - RL: RCT (Reactant); RACT (Reactant or reagent)
  - (organic, oxidizing agent; magnesium-based primary and secondary batteries)
- IT Membranes, nonbiological
  - (organic; magnesium-based primary and secondary batteries)
- IT Group VA element compounds
  - Transition metal pnictides
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (phosphides, substrate; magnesium-based primary and secondary batteries)
- IT Polysiloxanes, uses
  - RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
  - (polyalkyl; magnesium-based primary and secondary batteries)
- IT Casting of metals
  - (solvent; magnesium-based primary and secondary batteries)
- IT Alcohols, uses
  - Amides, uses
  - Amines, uses
  - Esters, uses
  - Ethers, uses
  - Thioethers
  - RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
  - (solvent; magnesium-based primary and secondary batteries)
- IT Glass fiber fabrics
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (spacers; magnesium-based primary and secondary batteries)
- IT Alkali metal oxides
  - Alkali metal sulfides
  - Alkaline earth oxides
  - Alloys, uses
  - Carbon fibers, uses
  - Metals, uses
  - Oxides (inorganic), uses
  - Phosphates, uses
  - Sulfides, uses
  - Transition metal oxides
  - Transition metal sulfides
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (substrate; magnesium-based primary and secondary batteries)
- IT Alkaline earth chalcogenides
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (sulfides, substrate; magnesium-based primary and secondary batteries)
- IT Esters, uses
  - RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
  - (thio, solvent; magnesium-based primary and secondary batteries)
- IT 7429-90-5D, Aluminum, trialkoxide, uses 7439-95-4D, Magnesium, dialkoxide, uses 7440-32-6D, Titanium, tetraalkoxide, uses 7440-67-7D, Zirconium, tetra-alkoxy, uses
  - RL: TEM (Technical or engineered material use); USES (Uses)

(anode stabilized with treatment with; magnesium-based primary and secondary batteries)

IT 7439-95-4, Magnesium, uses 7786-30-3, Magnesium chloride, uses  
 RL: DEV (Device component use); USES (Uses)  
 (magnesium-based primary and secondary batteries)

IT 25322-68-3DP, Polyethylene glycol, magnesium chloride salt  
 P2O5-acidified 33679-22-0P 120360-49-8P 155940-43-5P  
 156048-32-7P  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
 (Preparation); USES (Uses)  
 (magnesium-based primary and secondary batteries)

IT 204977-01-5, Edta homopolymer  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (magnesium-based primary and secondary batteries)

IT 546-93-0, Magnesium carbonate 1309-48-4, Magnesia, reactions  
 1314-56-3, Phosphorus pentoxide, reactions 7664-38-2, Phosphoric acid,  
 reactions 7664-41-7, Ammonia, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (magnesium-based primary and secondary batteries)

IT 9002-81-7, Polymethylene oxide 9002-81-7D, Polymethylene oxide,  
 fluorinated 9002-86-2, Polyvinyl chloride  
 9002-88-4, Polyethylene 9003-05-8,  
 Polyacrylamide 25014-41-9, Polyacrylonitrile 25322-68-3,  
 Polyethylene oxide 25322-68-3D, Polyethylene oxide,  
 fluorinated 25322-69-4, Polypropylene oxide 25322-69-4D,  
 Polypropylene oxide, fluorinated  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (magnesium-based primary and secondary batteries)

IT 7722-84-1, Hydrogen peroxide, reactions 7782-44-7, Oxygen, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (oxidizing agent; magnesium-based primary and secondary batteries)

IT 68-12-2, Dmf, uses 71-43-2, Benzene, uses 108-88-3, Toluene, uses  
 109-99-9, Thf, uses 127-19-5, n,n-Dimethyl acetamide  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (solvent; magnesium-based primary and secondary batteries)

IT 9004-34-6, Cellulose, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (spacers; magnesium-based primary and secondary batteries)

IT 7782-42-5, Graphite, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (substrate; magnesium-based primary and secondary batteries)

IT 7429-90-5D, Aluminum, trialkoxide, uses 7439-95-4D,  
 Magnesium, dialkoxide, uses 7440-32-6D, Titanium, tetraalkoxide,  
 uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (anode stabilized with treatment with; magnesium-based primary and secondary batteries)

RN 7429-90-5 HCAPLUS  
 CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7439-95-4 HCAPLUS  
 CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

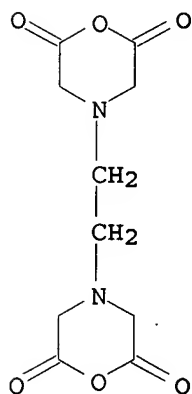
RN 7440-32-6 HCAPLUS  
CN Titanium (8CI, 9CI) (CA INDEX NAME)

Ti

IT 33679-22-0P 155940-43-5P 156048-32-7P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(magnesium-based primary and secondary batteries)  
RN 33679-22-0 HCAPLUS  
CN 2,6-Morpholinedione, 4,4'-(1,2-ethanediyl)bis-, polymer with  
1,2-ethanediol (9CI) (CA INDEX NAME)

CM 1

CRN 23911-25-3  
CMF C10 H12 N2 O6



CM 2

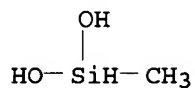
CRN 107-21-1  
CMF C2 H6 O2

HO-CH<sub>2</sub>-CH<sub>2</sub>-OH

RN 155940-43-5 HCAPLUS  
CN Silanediol, methyl-, polymer with oxirane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 43641-90-3  
CMF C H6 O2 Si



CM 2

CRN 75-21-8

CMF C2 H4 O



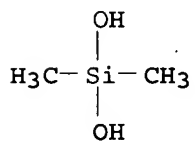
RN 156048-32-7 HCAPLUS

CN Silanediol, dimethyl-, polymer with oxirane (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8

CMF C2 H8 O2 Si



CM 2

CRN 75-21-8

CMF C2 H4 O



IT 9002-86-2, Polyvinyl chloride 9002-88-4,

Polyethylene 9003-05-8, Polyacrylamide

RL: TEM (Technical or engineered material use); USES (Uses)  
(magnesium-based primary and secondary batteries)

RN 9002-86-2 HCAPLUS

CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4

CMF C2 H3 Cl



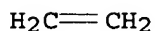
RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1

CMF C2 H4



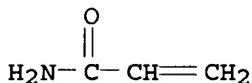
RN 9003-05-8 HCAPLUS

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1

CMF C3 H5 N O



RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:566291 HCAPLUS

DN 131:172705

TI Ion conductive matrixes and their use in electrochemical devices

IN Peled, Emanuel; Duvdevani, Tair; Melman, Avi

PA Ramot University Authority for Applied Research &amp; Industrial Development, Israel

SO PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9944245	A1	19990902	WO 1999-IL109	19990222
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
IL 123419	A1	20001206	IL 1998-123419	19980224
IL 126830	A1	20010520	IL 1998-126830	19981030
CA 2320696	AA	19990902	CA 1999-2320696	19990222
AU 9926369	A1	19990915	AU 1999-26369	19990222
EP 1066656	A1	20010110	EP 1999-906424	19990222
R: DE, ES, FR, GB, IT, NL, SE				
JP 2002505506	T2	20020219	JP 2000-533910	19990222
US 6811911	B1	20041102	US 2000-622676	20001018

PRAI IL 1998-123419 A 19980224  
 IL 1998-126830 A 19981030  
 WO 1999-IL109 W 19990222

AB The present invention provides an ion conducting matrix comprising: (i) 5 to 60% by volume of an inorg. powder having a good aqueous electrolyte absorption capacity, (ii) 5 to 50% by volume of a polymeric binder that is chemical compatible with an aqueous electrolyte, and (iii) 10 to 90% by volume

of an aqueous electrolyte, wherein the inorg. powder comprises essentially sub-micron particles. The present invention further provides a membrane being a film made of the matrix of the invention and a composite electrode comprising 10 to 70% by volume of the matrix of the invention.

IC ICM H01M004-58

ICS H01M006-14; H01M006-18; H01M006-16; H01M004-86; H01M004-62;  
 H01M004-34; H01M004-32; H01M004-50; H01M004-42; H01M006-00;  
 C25B011-04; C25B013-00; C25B009-00; C08J005-20; B23P019-00

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38, 72, 76

ST battery ion conductive matrix; capacitor ion conductive matrix

IT Primary batteries

(Zn-air; ion conductive matrixes and their use in electrochem. devices)

IT Carboxylic acids, uses

RL: MOA (Modifier or additive use); USES (Uses)

(aliphatic, esters, lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Carboxylic acids, uses

RL: MOA (Modifier or additive use); USES (Uses)

(aromatic, esters, lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Fluoropolymers, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(binder; ion conductive matrixes and their use in electrochem. devices)

IT Carboxylic acids, uses

RL: MOA (Modifier or additive use); USES (Uses)

(dicarboxylic, aliphatic, esters, lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Carboxylic acids, uses

RL: MOA (Modifier or additive use); USES (Uses)

(dicarboxylic, aryl, esters, lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Capacitors

(double layer; ion conductive matrixes and their use in electrochem. devices)

IT Hydrocarbons, uses

RL: MOA (Modifier or additive use); USES (Uses)

(fluoro, lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Fuel cells

Membranes, nonbiological

(ion conductive matrixes and their use in electrochem. devices)

IT Metalloporphyrins

Oxides (inorganic), uses

RL: CAT (Catalyst use); USES (Uses)

(ion conductive matrixes and their use in electrochem. devices)

IT Lubricants

(liquid; ion conductive matrixes and their use in electrochem. devices)

IT Hydrocarbons, uses

Polysiloxanes, uses

RL: MOA (Modifier or additive use); USES (Uses)

(lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Polysulfones, uses  
 Polysulfones, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polyamide-, binder; ion conductive matrixes and their use in electrochem. devices)

IT Binders  
 (polymer; ion conductive matrixes and their use in electrochem. devices)

IT Polyamides, uses  
 Polyamides, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polysulfone-, binder; ion conductive matrixes and their use in electrochem. devices)

IT Electrolytic cells  
 (water; ion conductive matrixes and their use in electrochem. devices)

IT 7429-90-5, Aluminum, uses 7440-43-9, Cadmium, uses  
 7440-66-6, Zinc, uses  
 RL: DEV (Device component use); USES (Uses)  
 (anodes; ion conductive matrixes and their use in electrochem. devices)

IT 9002-84-0 9002-86-2, Pvc 9003-05-8,  
 Polyacrylamide 9011-14-7, Pmma 9011-17-0, Polyvinylidene  
 fluoride hexafluoropropylene 24937-79-9 24981-14-4, Polyvinyl  
 fluoride 25014-41-9, Polyacrylonitrile  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (binder; ion conductive matrixes and their use in electrochem. devices)

IT 1313-13-9, Manganese dioxide, uses 20667-12-3, Silver oxide  
 55070-72-9, Nickel hydroxide oxide  
 RL: DEV (Device component use); USES (Uses)  
 (cathodes; ion conductive matrixes and their use in electrochem. devices)

IT 1314-35-8, Tungsten oxide, uses 12036-10-1, Ruthenium dioxide  
 RL: DEV (Device component use); USES (Uses)  
 (electrode; ion conductive matrixes and their use in electrochem. devices)

IT 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses  
 RL: DEV (Device component use); USES (Uses)  
 (electrodes; ion conductive matrixes and their use in electrochem. devices)

IT 7439-96-5, Manganese, uses 7440-05-3, Palladium, uses 7440-06-4,  
 Platinum, uses 7440-22-4, Silver, uses 7440-33-7, Tungsten, uses  
 7440-50-8, Copper, uses 7440-57-5, Gold, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (ion conductive matrixes and their use in electrochem. devices)

IT 354-88-1, Ethanesulfonic acid, pentafluoro- 375-73-5,  
 Nonafluorobutanesulfonic acid 423-41-6 1493-13-6 2706-91-4,  
 1-Pentanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,5-undecafluoro- 14970-71-9,  
 Dithionic acid 40856-11-9 41062-44-6 56344-03-7 82727-18-2  
 RL: DEV (Device component use); USES (Uses)  
 (ion conductive matrixes and their use in electrochem. devices)

IT 1303-86-2, Boron oxide b2o3, uses 1314-23-4, Zirconia, uses 1344-28-1,  
 Aluminum oxide (Al2O3), uses 7631-86-9, Silica, uses 13463-67-7,  
 Titania, uses  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (ion conductive matrixes and their use in electrochem. devices)

IT 10043-35-3, Boric acid (H3BO3), uses 12651-23-9, Titanium hydroxide  
 12713-25-6, Zirconium hydroxide oxide 12738-89-5, Titanium hydroxide

oxide 14475-63-9, Zirconium hydroxide 21645-51-2, Aluminum hydroxide, uses 24623-77-6, Aluminum hydroxide oxide

RL: MOA (Modifier or additive use); USES (Uses)

(ion conductive matrixes and their use in electrochem. devices)

IT 67-64-1, 2-Propanone, uses 68-12-2, uses 78-93-3, Ethyl methyl ketone, uses 84-66-2, Diethyl phthalate 84-74-2, Dibutyl phthalate 96-48-0 96-49-1, Ethylene carbonate 102-76-1, Glycerol triacetate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-94-1, Cyclohexanone, uses 109-99-9, uses 110-12-3, Isoamyl methyl ketone 110-71-4 120-92-3, Cyclopentanone 127-19-5, Dimethyl acetamide 131-11-3, Dimethyl phthalate 616-38-6, Dimethyl carbonate 872-50-4, n-Methylpyrrolidone, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(ion conductive matrixes and their use in electrochem. devices)

IT 124-18-5, Decane 238407-65-3, Yivac 06/6

RL: MOA (Modifier or additive use); USES (Uses)

(lubricant; ion conductive matrixes and their use in electrochem. devices)

IT 7664-38-2D, Phosphoric acid, ester, uses

RL: MOA (Modifier or additive use); USES (Uses)

(lubricants; ion conductive matrixes and their use in electrochem. devices)

IT 7429-90-5, Aluminum, uses 7440-66-6, Zinc, uses

RL: DEV (Device component use); USES (Uses)

(anodes; ion conductive matrixes and their use in electrochem. devices)

RN 7429-90-5 HCAPLUS

CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7440-66-6 HCAPLUS

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 9002-86-2, Pvc 9003-05-8, Polyacrylamide

RL: TEM (Technical or engineered material use); USES (Uses)

(binder; ion conductive matrixes and their use in electrochem. devices)

RN 9002-86-2 HCAPLUS

CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4

CMF C2 H3 Cl

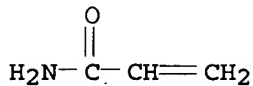
H<sub>2</sub>C=CH-Cl

RN 9003-05-8 HCAPLUS

CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1  
CMF C3 H5 N O



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:585324 HCAPLUS

DN 129:218983

TI Bipolar lead-acid battery plates

IN Grosvenor, Victor L.; Pinsky, Naum

PA USA

SO U.S., 9 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5800946	A	19980901	US 1996-761781	19961206
	US 6077623	A	20000620	US 1998-96849	19980611
PRAI	US 1996-761781	A3	19961206		

AB Electrodes, especially useful in bipolar plates of Pb-acid batteries, include a metal-containing substrate, an elec. conductive material secured to the 1st side of the substrate, an elec. conductive **layer** including a **polymer** secured to the 2nd side of the substrate, and a **metallic layer** secured to the elec. conductive layer so that the elec. conductive layer is located between the **metallic layer** and the substrate. Bipolar plates are provided and include an elec. conductive electrode element, a grid spaced apart from the electrode in proximity to the 1st side of the electrode element, pos. active material in contact with the 1st side or 2nd side of the **electrode** element and **neg.** active material in contact with the 2nd side or 1st side of the electrode element which is not in contact with the pos. active material.

IC ICM H01M010-18

INCL 429210000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST lead acid battery bipolar plate; electrode bipolar lead acid battery

IT Acrylic polymers, uses

Polycarbonates, uses

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(in manufacture of bipolar lead-acid battery plates)

IT Battery electrodes

(manufacture of bipolar lead-acid)

IT 7440-32-6, Titanium, uses

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(in manufacture of bipolar lead-acid battery plates)

IT 18282-10-5DP, Tin dioxide, fluorine-doped

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP. (Preparation); USES (Uses)

(in manufacture of bipolar lead-acid battery plates)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
AN 1995:470158 HCAPLUS  
DN 122:218560  
TI High performance lithium or zinc secondary batteries with film-coated  
anodes  
IN Kawakami, Soichiro; Mishina, Shinya; Kobayashi, Naoya  
PA Canon K. K., Japan  
SO Eur. Pat. Appl., 88 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 600718	A2	19940608	EP 1993-309571	19931130
	EP 600718	A3	19951115		
	EP 600718	B1	20000426		
	R: CH, DE, FR, GB, IT, LI				
	JP 06168737	A2	19940614	JP 1992-320557	19921130
	JP 2943127	B2	19990830		
	JP 06168721	A2	19940614	JP 1992-320558	19921130
	JP 3067426	B2	20000717		
	JP 06168739	A2	19940614	JP 1992-320559	19921130
	JP 2771406	B2	19980702		
	JP 06168715	A2	19940614	JP 1992-320560	19921130
	JP 3487556	B2	20040119		
	JP 06196199	A2	19940715	JP 1992-344563	19921224
	JP 3423338	B2	20030707		
	JP 06283157	A2	19941007	JP 1993-78342	19930405
	JP 3530544	B2	20040524		
	CA 2110097	AA	19940531	CA 1993-2110097	19931126
	CA 2110097	C	20020709		
	CA 2331602	AA	19940531	CA 1993-2331602	19931126
	CA 2331602	C	20020910		
	AU 9352003	A1	19940609	AU 1993-52003	19931129
	EP 809314	A2	19971126	EP 1997-200434	19931130
	EP 809314	A3	19981014		
	R: CH, DE, FR, GB, IT, LI				
	US 5824434	A	19981020	US 1993-159141	19931130
	US 6391492	B1	20020521	US 1995-482569	19950607
	AU 9726133	A1	19970828	AU 1997-26133	19970619
	AU 715180	B2	20000120		
	US 6207326	B1	20010327	US 1997-980055	19971126
	US 6395423	B1	20020528	US 1998-163545	19980930
	US 2002031701	A1	20020314	US 2001-879227	20010613
	US 7081320	B2	20060725		
PRAI	JP 1992-320557	A	19921130		
	JP 1992-320558	A	19921130		
	JP 1992-320559	A	19921130		
	JP 1992-320560	A	19921130		
	JP 1992-344563	A	19921224		
	JP 1993-78342	A	19930405		
	JP 1992-245321	A	19920914		
	JP 1992-245322	A	19920914		
	JP 1992-245323	A	19920914		
	JP 1992-245324	A	19920914		

	JP 1992-245325	A	19920914
	JP 1992-245326	A	19920914
	JP 1993-13721	A	19930129
	CA 1993-2110097	A3	19931126
	EP 1993-309571	A3	19931130
	US 1993-159141	A3	19931130
	US 1995-482569	A3	19950607
	US 1998-163545	A3	19980930

AB The secondary battery with long cycle life has a Li or Zn anode activating material, electrolytic solution, a separator, cathode activating material, a collecting electrode and a battery case, where the surface of the anode is covered with a film having a structure which allows ions relating to the battery reactions to pass through. Since growth of dendrite of Li or Zn at the time of the charge can be prevented, short circuit between the anode and cathode can be prevented. A Li battery, Ni-Zn battery, air-Zn battery, Br-Zn battery and AgO-Zn battery are described.

IC ICM H01M010-40  
ICS H01M010-24; H01M004-24; H01M004-02; H01M002-14; H01M004-36

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary battery high performance; lithium secondary battery high performance; zinc secondary battery high performance; anode film high performance battery

IT Batteries, secondary  
(Li, Ni-Zn, air-Zn, Br-Zn, AgO-Zn; high performance lithium or zinc secondary batteries with film-coated anodes)

IT Porphyrins  
RL: DEV (Device component use); USES (Uses)  
(cathode insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)

IT Fluoropolymers  
Siloxanes and Silicones, uses  
RL: DEV (Device component use); USES (Uses)  
(cathode; high performance lithium or zinc secondary batteries with film-coated anodes)

IT Carbon fibers, uses  
RL: DEV (Device component use); USES (Uses)  
(conductive layer; high performance lithium or zinc secondary batteries with film-coated anodes)

IT Carbides  
Fluorides, uses  
Halides  
Nitriles  
RL: DEV (Device component use); USES (Uses)  
(electrodes; high performance lithium or zinc secondary batteries with film-coated anodes)

IT Aromatic hydrocarbons, uses  
RL: DEV (Device component use); USES (Uses)  
(insulating film, polymers; high performance lithium or zinc secondary batteries with film-coated anodes)

IT Cryptands  
RL: DEV (Device component use); USES (Uses)  
(insulating film; high performance lithium or zinc secondary batteries with film-coated anodes)

IT Glass, oxide  
RL: DEV (Device component use); USES (Uses)  
(insulating layer; high performance lithium or zinc secondary batteries with film-coated anodes)

IT Polyamines

Polyethers, uses  
 Sulfides, uses  
 RL: DEV (Device component use); USES (Uses)  
 (ring, insulating film; high performance lithium or zinc secondary  
 batteries with film-coated **anodes**)

IT Thiols, uses  
 RL: DEV (Device component use); USES (Uses)  
 (crown ether, insulating film; high performance lithium or zinc  
 secondary batteries with film-coated **anodes**)

IT Crown compounds  
 RL: DEV (Device component use); USES (Uses)  
 (cryptands, insulating film; high performance lithium or zinc secondary  
 batteries with film-coated **anodes**)

IT Crown compounds  
 RL: DEV (Device component use); USES (Uses)  
 (ether imines, insulating film; high performance lithium or zinc  
 secondary batteries with film-coated **anodes**)

IT Crown compounds  
 RL: DEV (Device component use); USES (Uses)  
 (ethers, thiol, insulating film; high performance lithium or zinc  
 secondary batteries with film-coated **anodes**)

IT Crown compounds  
 RL: DEV (Device component use); USES (Uses)  
 (imines, insulating film; high performance lithium or zinc secondary  
 batteries with film-coated **anodes**)

IT Polyethers, uses  
 RL: DEV (Device component use); USES (Uses)  
 (thio-, ring, insulating film; high performance lithium or zinc  
 secondary batteries with film-coated **anodes**)

IT Lithium alloy, base  
 Zinc alloy, base  
 RL: DEV (Device component use); USES (Uses)  
 (**anode**; high performance lithium or zinc secondary batteries  
 with film-coated **anodes**)

IT 28406-56-6, Poly(2-vinylnaphthalene) 29659-51-6, Poly  
 (9-Vinylnanthracene)  
 RL: DEV (Device component use); USES (Uses)  
 (**anode** film; high performance lithium or zinc secondary  
 batteries with film-coated **anodes**)

IT 1314-13-2, Zinc oxide, uses 7439-93-2, Lithium, uses 7440-66-6  
 , Zinc, uses 25038-71-5, Ethylene-tetrafluoroethylene copolymer  
 25791-89-3 26702-40-9 27120-35-0 28212-48-8,  
 Polydiphenoxyphosphazene 28212-50-2, Polybis(trifluoroethoxy)phosphazene  
 37626-13-4 94667-38-6 111093-02-8, Tirano coat 153315-80-1  
 162036-42-2 162036-43-3 162036-44-4 162036-45-5  
 162036-46-6 162036-49-9  
 RL: DEV (Device component use); USES (Uses)  
 (**anode**; high performance lithium or zinc secondary batteries  
 with film-coated **anodes**)

IT 50-32-8D, Benzopyrene, polymers 85-01-8D, Phenanthrene, polymers  
 91-20-3D, Naphthalene, polymers 92-24-0D, Naphthacene, polymers  
 120-12-7D, Anthracene, polymers 129-00-0D, Pyrene, polymers 190-26-1D,  
 Ovalene, polymers 191-07-1D, Coronene, polymers 213-46-7D, Picene,  
 polymers 217-59-4D, Triphenylene, polymers 539-52-6D, Perillene,  
 polymers 574-93-6, Phthalocyanine 1335-25-7, Lead oxide 12619-70-4,  
 Cyclodextrin  
 RL: DEV (Device component use); USES (Uses)  
 (cathode insulating film; high performance lithium or zinc secondary  
 batteries with film-coated **anodes**)

IT 1314-62-1, Vanadium oxide (V2O5), uses 7429-90-5, Aluminum, uses

7439-92-1, Lead, uses 7439-95-4, Magnesium, uses 7440-09-7, Potassium, uses 7440-23-5, Sodium, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-38-2, Arsenic, uses 7440-39-3, Barium, uses 7440-42-8, Boron, uses 7440-69-9, Bismuth, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses 7723-14-0, Phosphorus, uses 9002-88-4 9003-07-0, Polypropene 12054-48-7, Nickel hydroxide 12209-58-4, Molybdenum vanadium oxide 39300-70-4, Lithium nickel oxide 39457-42-6, Lithium manganese oxide 120479-28-9, Cobalt copper lithium oxide 131344-56-4, Cobalt Lithium nickel oxide 152654-50-7, Cobalt iron lithium oxide

RL: DEV (Device component use); USES (Uses)

(cathode; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 7440-02-0, Nickel, uses 7440-06-4, Platinum, uses 7440-21-3, Silicon, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses

RL: DEV (Device component use); USES (Uses)

(conductive layer; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 12673-92-6, Titanium sulfide 25498-03-7 162036-47-7 162036-48-8 162036-50-2

RL: DEV (Device component use); USES (Uses)

(high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 75-73-0, Carbon tetrafluoride 1333-74-0, Hydrogen, uses 7440-37-1, Argon, uses 7440-59-7, Helium, uses 7440-63-3, Xenon, uses 7647-01-0, Hydrochloric acid, uses 7664-39-3, Hydrofluoric acid, uses 7664-41-7, Ammonia, uses 7727-37-9, Nitrogen, uses 7782-41-4, Fluorine, uses 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses 7783-54-2, Nitrogen trifluoride

RL: NUU (Other use, unclassified); USES (Uses)

(plasma **anode** treatment agent; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesium oxide (MgO), uses 1310-53-8, Germanium oxide, uses 1312-43-2, Indium oxide 1314-23-4, Zirconia, uses 1332-29-2, Tin oxide 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 11118-57-3, Chrome oxide 12640-89-0, Selenium oxide 13463-67-7, Titania, uses

RL: DEV (Device component use); USES (Uses)

(separator; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 7440-66-6, Zinc, uses 25038-71-5, Ethylene-tetrafluoroethylene copolymer 25791-89-3 26702-40-9 27120-35-0 153315-80-1 162036-43-3 162036-46-6

RL: DEV (Device component use); USES (Uses)

(**anode**; high performance lithium or zinc secondary batteries with film-coated **anodes**)

RN 7440-66-6 HCAPLUS

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

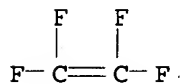
RN 25038-71-5 HCAPLUS

CN Ethene, tetrafluoro-, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3

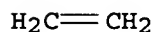
CMF C2 F4



CM 2

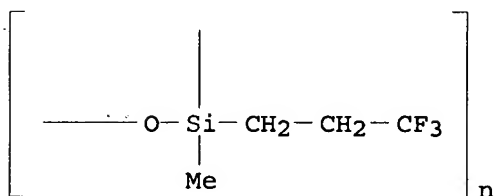
CRN 74-85-1

CMF C2 H4



RN 25791-89-3 HCAPLUS

CN Poly[oxy[methyl(3,3,3-trifluoropropyl)silylene]] (8CI, 9CI) (CA INDEX NAME)



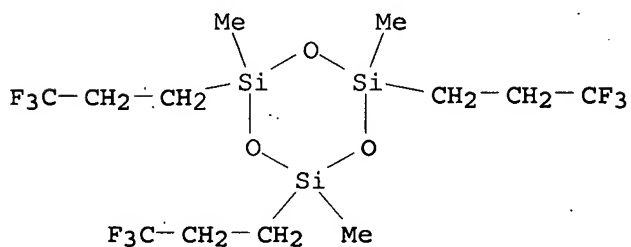
RN 26702-40-9 HCAPLUS

CN Cyclotrisiloxane, 2,4,6-trimethyl-2,4,6-tris(3,3,3-trifluoropropyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 2374-14-3

CMF C12 H21 F9 O3 Si3



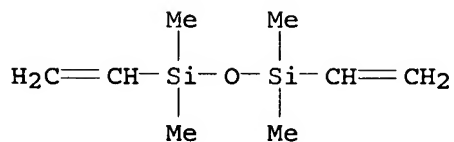
RN 27120-35-0 HCAPLUS

CN Disiloxane, 1,3-diethenyl-1,1,3,3-tetramethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

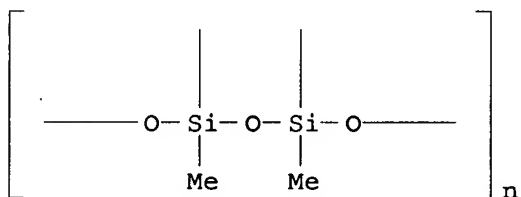
CRN 2627-95-4

CMF C8 H18 O Si2



RN 153315-80-1 HCAPLUS

CN Poly[(1,3-dimethyl-1,3:1,3-disiloxanediylidene)-1,3-bis(oxy)] (9CI) (CA INDEX NAME)



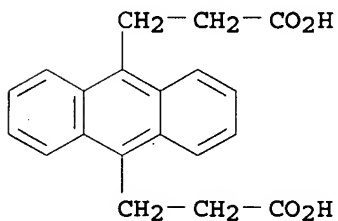
RN 162036-43-3 HCAPLUS

CN 9,10-Anthracenedipropenoic acid, polymer with 1,2-ethanediol (9CI) (CA INDEX NAME)

CM 1

CRN 71367-28-7

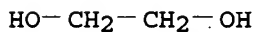
CMF C20 H18 O4



CM 2

CRN 107-21-1

CMF C2 H6 O2



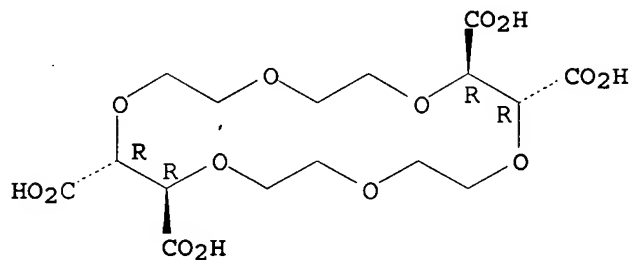
RN 162036-46-6 HCAPLUS

CN 1,4,7,10,13,16-Hexaoxacyclooctadecane-2,3,11,12-tetracarboxylic acid, [2R-(2R\*,3R\*,11R\*,12R\*)]-, polymer with 1,4-butanediol and 1,3-diisocyanatomethylbenzene (9CI) (CA INDEX NAME)

CM 1

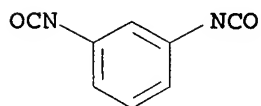
CRN 61696-54-6  
CMF C16 H24 O14

Absolute stereochemistry. Rotation (+).



CM 2

CRN 26471-62-5  
CMF C9 H6 N2 O2  
CCI IDS



D1-Me

CM 3

CRN 110-63-4  
CMF C4 H10 O2

HO-(CH<sub>2</sub>)<sub>4</sub>-OH

IT 9002-88-4 9003-07-0, Polypropene  
RL: DEV (Device component use); USES (Uses)  
(cathode; high performance lithium or zinc secondary batteries with  
film-coated **anodes**)

RN 9002-88-4 HCAPLUS  
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

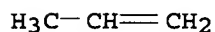
CRN 74-85-1  
CMF C2 H4

H<sub>2</sub>C=CH<sub>2</sub>

RN 9003-07-0 HCAPLUS  
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1  
CMF C3 H6

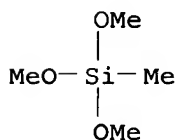


IT 25498-03-7 162036-50-2  
RL: DEV (Device component use); USES (Uses)  
(high performance lithium or zinc secondary batteries with film-coated anodes)

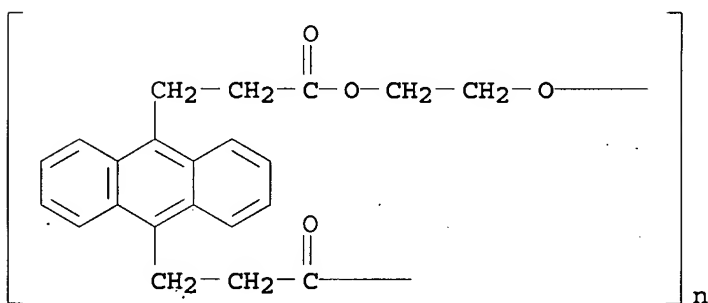
RN 25498-03-7 HCAPLUS  
CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1185-55-3  
CMF C4 H12 O3 Si



RN 162036-50-2 HCAPLUS  
CN Poly[oxy-1,2-ethanedioxy(1-oxo-1,3-propanediyl)-9,10-anthracenediyl(3-oxo-1,3-propanediyl)] (9CI) (CA INDEX NAME)



L36 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
AN 1994:413959 HCAPLUS  
DN 121:13959  
TI Zinc anode for alkaline storage battery  
IN Suga, Masanobu; Akita, Seiichi; Kuroda, Nobuyuki  
PA Nippon Oil Co., Ltd., Japan  
SO Can. Pat. Appl., 32 pp.  
CODEN: CPXXEB

DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 2101872	AA	19940208	CA 1993-2101872	19930804
	JP 06060871	A2	19940304	JP 1992-251812	19920807
	JP 06060876	A2	19940304	JP 1992-255323	19920812
	US 5382482	A	19950117	US 1993-99174	19930729
	EP 584987	A1	19940302	EP 1993-306208	19930805
	EP 584987	B1	19981028		

R: DE, FR, GB

PRAI JP 1992-251812 A 19920807  
 JP 1992-255323 A 19920812

AB A Zn anode for an alkaline storage battery comprises an electrode using Zn as active material and a polymer layer which is substantially in direct contact with the electrode, the polymer layer containing  $\geq 1$  polymer having a crosslinked structure, for use in an alkaline storage battery in which the occurrence of dendrite and shape change is suppressed. The polymer is selected from a polymer A (e.g., polyvinyl alc.) with ion conductivity  $10^{-3}$  to  $10$  S/cm in alkali electrolyte, crosslinked polymer A, a polymer A' obtained by introducing a group B (e.g.,  $\text{CH}_2\text{CH}(\text{CH}_3)_2$ ) into a portion of a main chain of polymer A to improve gas permeability, a polymer C (e.g., polyorganosiloxane) having an O permeability constant of  $>10^{-10}$  cm<sup>3</sup> STP cm<sup>-1</sup>s<sup>-1</sup>cmHg<sup>-1</sup>, crosslinked polymer C, and a polymer C' obtained by introducing a group D (e.g., COOH) into a portion of a main chain of polymer C to improve ion conductivity

IC ICM H01M004-24  
 ICS H01M004-26

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST zinc anode alk secondary battery

IT Polysulfones, uses

RL: USES (Uses)

(crosslinked, zinc anodes containing, for alkaline batteries)

IT Anodes

(battery, zinc, for alkaline secondary batteries)

IT Siloxanes and Silicones, uses

RL: USES (Uses)

(crosslinked, zinc anodes containing, for alkaline batteries)

IT Polyamines

RL: USES (Uses)

(polyethylene-, N-acyl, crosslinked, zinc anodes containing, for alkaline batteries)

IT Polymers, uses

RL: USES (Uses)

(polyparabanic acids, crosslinked, zinc anodes containing, for alkaline batteries)

IT 7440-66-6, Zinc, uses

RL: DEV (Device component use); USES (Uses)

(anodes, for alkaline batteries)

IT 79-10-7D, 2-Propenoic acid, esters, polymers, crosslinked 79-41-4D, esters, polymers, crosslinked 116-14-3, Tetrafluoroethylene, uses 1314-13-2, Zinc oxide, uses 9002-89-5D, Polyvinyl alcohol, crosslinked 9003-01-4D, Polyacrylic acid, crosslinked 9003-39-8D, Polyvinylpyrrolidone, crosslinked 9004-32-4D, Carboxymethyl cellulose, crosslinked 9080-79-9D, Sodium polystyrenesulfonate, crosslinked 25014-41-9D, Polyacrylonitrile, crosslinked 25068-26-2D, Poly(4-methylpentene-1), crosslinked 25087-26-7D, Polymethacrylic acid, crosslinked 25322-68-3D, crosslinked

155827-15-9 155827-16-0 155827-17-1  
 RL: USES (Uses)  
 (zinc **anodes** containing, for alkaline batteries)  
 IT 7440-66-6, Zinc, uses  
 RL: DEV (Device component use); USES (Uses)  
 (anodes, for alkaline batteries)  
 RN 7440-66-6 HCAPLUS  
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 9004-32-4D, Carboxymethyl cellulose, crosslinked  
 25068-26-2D, Poly(4-methylpentene-1), crosslinked  
 155827-15-9 155827-16-0  
 RL: USES (Uses)  
 (zinc **anodes** containing, for alkaline batteries)  
 RN 9004-32-4 HCAPLUS  
 CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

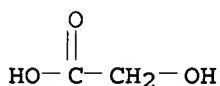
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

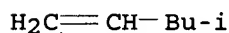
CRN 79-14-1  
 CMF C2 H4 O3



RN 25068-26-2 HCAPLUS  
 CN 1-Pentene, 4-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

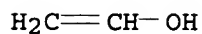
CRN 691-37-2  
 CMF C6 H12



RN 155827-15-9 HCAPLUS  
 CN Ethenol, polymer with diethoxydimethylsilane (9CI) (CA INDEX NAME)

CM 1

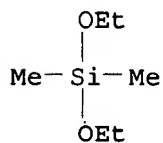
CRN 557-75-5  
 CMF C2 H4 O



CM 2

CRN 78-62-6

CMF C6 H16 O2 Si



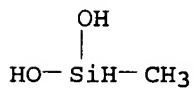
RN 155827-16-0 HCAPLUS

CN 3-Butenoic acid, polymer with dimethylsilanediol, 1-heptene and methylsilanediol, graft (9CI) (CA INDEX NAME)

CM 1

CRN 43641-90-3

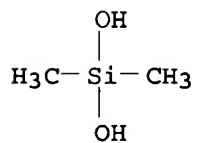
CMF C H6 O2 Si



CM 2

CRN 1066-42-8

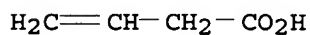
CMF C2 H8 O2 Si



CM 3

CRN 625-38-7

CMF C4 H6 O2



CM 4

CRN 592-76-7  
CMF C7 H14

$\text{H}_2\text{C}=\text{CH}-(\text{CH}_2)_4-\text{Me}$

L36 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
AN 1986:210035 HCAPLUS  
DN 104:210035  
TI Air cathode  
IN Tsuruta, Shinji; Suzuki, Nobukazu  
PA Toshiba Corp., Japan  
SO Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60253161	A2	19851213	JP 1984-108562	19840530
PRAI	JP 1984-108562		19840530		
AB	An air cathode consists of a porous electrode body that can electrochem. reduce O and acts as current collector, and an O-selective permeable membrane of a sintered ultrafine metal powder and a fluoropolymer. The electrode prevents penetration of air moisture and increases the battery storage stability and discharge performance under heavy load. Thus, an air cathode was prepared from a Raney Ni body and FEP membrane containing 5% ultrafine Sn powder. Membrane thickness was 0.5μ, and its O to H2O vapor permeability ratio was 2.0:1. A battery constructed from the cathode, a gelled Zn-3% Hg anode, KOH electrolyte, and a polyamide separator showed a high discharge stability, due to preservation of the cathode working condition, vs. batteries using cathodes with membranes of PTFE containing active carbon, with or without CaCl2, or of polysiloxane containing Pd.				
IC	ICM H01M004-86				
	ICS G01N027-30				
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology)				
	Section cross-reference(s): 38				
ST	cathode air oxygen permeable membrane; battery cathode oxygen permeable membrane; tin FEP membrane oxygen cathode				
IT	Cathodes (battery, catalytic, nickel-air, with oxygen-permeable FEP membrane containing tin)				
IT	7440-31-5, uses and miscellaneous RL: USES (Uses) (cathodes with FEP film containing, nickel-air catalytic, for fuel cells)				
IT	7429-90-5, uses and miscellaneous 7439-89-6, uses and miscellaneous 7440-48-4, uses and miscellaneous 7440-50-8, uses and miscellaneous RL: USES (Uses) (cathodes with polymer film containing, nickel-air catalytic, for fuel cells)				
IT	9002-84-0 25067-11-2 RL: USES (Uses) (cathodes with ultrafine metal powder-containing film of, nickel-air catalytic, for fuel cells)				
IT	7782-44-7, uses and miscellaneous RL: USES (Uses)				

(cathodes, nickel catalytic, with FEP permeable membrane containing tin, for fuel cells)

IT 7440-02-0, uses and miscellaneous

RL: USES (Uses)

(cathodes, oxygen catalytic, with FEP permeable membrane containing tin, for fuel cells)

L36 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1978:549474 HCAPLUS

DN 89:149474

TI Zinc alkaline secondary batteries

IN Ikeda, Hiroshi; Yokoyama, Takao; Inaba, Yoshihisa; Kumano, Yasuyuki

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53050450	A2	19780508	JP 1976-125334	19761018
	JP 55025464	B4	19800705		
PRAI	JP 1976-125334	A	19761018		

AB Zn alkaline batteries contain a ZnO-Zn anode. The anode contains an inorg. substance (Si) and a polymer which expands on absorption of an alkaline electrolyte. The polymer is polyacetal, polyacrylate, polyphenylene oxide vinyl butyral polymer, or polyester. Thus, a Zn alkaline-battery anode consisted of a Cu mesh collector, a powdered ZnO-Zn mixture, polyacrylate, Si, and poly(vinyl alc.). The number of charge-discharge cycles for a battery using the anode was .apprx.320 vs. .apprx.170 for a battery with an anode not containing Si.

IC H01M004-62

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST zinc alk battery anode; silicon zinc battery anode

IT Anodes

(battery, silicon-containing zinc, alkaline-)

IT Batteries, secondary

(zinc alkaline)

IT 7440-21-3, uses and miscellaneous

RL: USES (Uses)

(anodes containing, zinc alkaline-battery)

IT 7440-66-6, uses and miscellaneous

RL: USES (Uses)

(anodes, silicon-containing alkaline-battery)

IT 7440-66-6, uses and miscellaneous

RL: USES (Uses)

(anodes, silicon-containing alkaline-battery)

RN 7440-66-6 HCAPLUS

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

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